BUSINESS WEEK

SEPT. 18, 1948

C. J. Reese: His new Continental engines are built by sections (page 6)

USINESS
EEK
DEX

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THERE'S A BIG DIFFERENCE

Once you have used Bower Spher-O-honed bearings you'll agree with the many who use them that here are truly outstanding bearings. They give consistently finer performance on every count. ★ Marked superiority is built into every Bower Spher-O-honed bearing because of their basically different and greatly improved design—spherical roll-ends and flange surfaces, a large oil groove and higher cone flange—and because the most modern manufacturing techniques are employed which produce micro-inch precision. ★ These are the significant advantages that explain the extra smoothness, longer life, and greater dependability of Bower Spher-O-honed bearings . . . the big difference that makes them your best bearing buy.

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BOWER

SPHER-O-HONED

ROLLER BEARINGS

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Today, Long Distance calls go through in about two minutes on the average. Now and then there are delays, but we're handling nine out of ten calls while you hold the line.

We've added many new circuits and switchboards and more are coming along. Our operators know their job.

Our aim is to put your out-of-town calls through faster than ever before. And we're working hard to do it.

BELL TELEPHONE SYSTEM

Fine Coatings Bring Lifelong Beauty To Silverware Chests Made By Rock Manufacturing Company Stoughton, Mass.

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THE HEIRLOOM look of luxury comes with the fine Monsanto finish on this exquisite wood chest. Rock Manufacturing Company, specified and got a job-tested finish scientifically designed to last a lifetime in this setting for silver.

The same painstaking technical care is taken with every one of Monsanto's coatings for wood. Properties are specifically developed from the quality appearance and sales appeal of this chest lacquer to the high impact resistance of bowling pin lacquers.

For fabrics, metals, paper and leather . . . as well as wood . . . Monsanto scientists have developed 15,000 different formulations. Each will do a special industrial job exactly right. Businessmen everywhere are invited to send the coupon for information or technical help.

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☐ *Please send me information on Monsanto coatings for* . . . . . .

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THE COVER

Clarence J. (for "Jack") Reese is a man in constant motion. The president of Continental Motors Corp. is a fast mover even by the standards of the busy automotive community.

Reese moves by fast car or plane between plants in Muskegon, Mich., Detroit, and Milwaukee as casually as most executives walk between adjoining offices. Sixteen-hour days are nothing unusual in his schedule; they seem to agree with him. He may start his day at 8 a. m. in Detroit, wind it up at midnight in Muskegon, knocking down 500 miles of travel between meetings.

• **Toward a Goal**—Reese's activity is motion with a purpose. He sets the policy for Continental and carries it through. You'll find him at conferences with his technicians, talking big sales with Continental customers, or ironing out production problems on the shop floor.

Reese was installed as head of Continental in 1939 when it was limping badly. He stripped it for action almost overnight. New business showed on the books from the first week he held the job. Then came the war and its boom. Today Continental leads the field among independent engine manufacturers in the country.

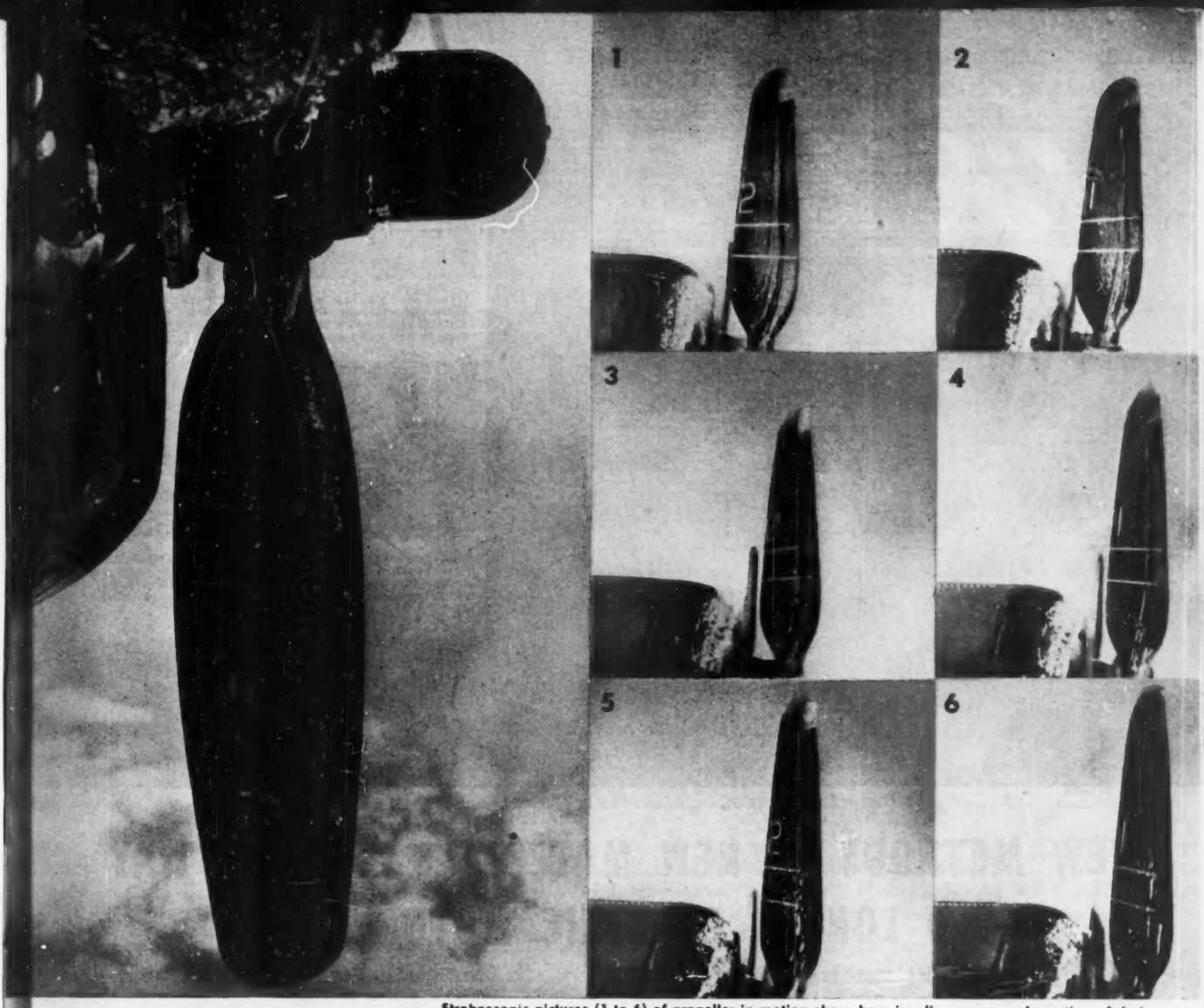
This week, as one more step in its program to stay in the lead, Continental came up with a new air-cooled engine, developed for the Army.

• **Early Days**—Reese was born in Muncie, Ind., 48 years ago. He polished off a high school education with some correspondence-school courses, followed them up with a tool maker's apprenticeship at Youngstown Sheet & Tube. Then came factory jobs in Ohio rubber companies, and production engineering and purchasing work at Chevrolet.

He came to Continental in 1931 as a purchasing agent.

One tipoff on Reese's habits: It's a real occasion in the Continental offices to catch him without his hat on.

—Complete story on Continental Motors starts on page 46. Cover painting by Ralph Iligan



Stroboscopic pictures (1 to 6) of propeller in motion show how ice disappears under action of de-icer.

NYLON'S STRENGTH HELPS PROPELLERS FIGHT ICE

Planes get the shakes when propellers pick up ice in flight. And besides the terrific vibration set up by the propeller imbalance, there's loss of thrust . . . diminished power.

But now the leading edges of propellers are protected by an electrically heated fabric skin, made with Du Pont nylon fibers. When ice builds up, the pilot turns on the heat and, as you see above, away goes the ice!

By using nylon, engineers were able to make the fabric skin so thin and smooth that it does not affect the efficiency of the propeller blade. Yet the skin has the tremendous strength necessary to withstand the centrifugal force that's constantly trying to rip it off.

Perhaps you can use Du Pont nylon fibers, in whole or in part, to make a new product—or improve your production methods.

• • •

NEW BOOKLET: "*Nylon Textile Fibers in Industry*" tells more about nylon's remarkable combination of properties. Write on your letterhead for a copy, and tell us your fabric problem. Nylon fibers may give you the extra performance you need. Address Nylon Division, Room 6509, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

For nylon . . . for rayon . . . for fibers to come . . . look to Du Pont

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Resist deterioration by mildew, soil rot, petroleum oils, alkalies

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

OLD
OLD
Usual slot design with sharp corners into which slot cell insulation must be creased and coils pushed.
Old slot shape frequently required tapping wires of coil into position with possibility of damaged insulation.
NEW
NEW
Life-Line slot design is pear-shaped. Coil slips in easily—no corner voids remain to collect moisture.
Life-Line "pear-shaped" slots permit coils to be inserted snugly into position without tapping or stress.

NEW METHODS . . . NEW MATERIALS . . . OPEN WAY TO LONGER ELECTRIC MOTOR LIFE

An electric motor's "muscle" consists of the "sinews" or coils of wire packed into slots in the stator of the motor.

If these are "bruised", or damaged while being put in—or if spaces are left for dirt or moisture to gather—protective insulation breaks down and electrical failures result. *Most motor failures are caused in this way.*

Life-Line—industry's all steel motor—overcomes these common causes of motor failure. New, pear-shaped slots enable coils to be slipped into place without stress, eliminating need for tapping. No slot corners are left to require creasing of the slot insulation, nor to gather dirt in these voids.

New electrical design is just one of the benefits Life-Line motors bring to builders and users of motor-driven equipment. Get the details on Life-Line's smaller size, lighter weight, greater strength and smoothness. Life-Line motors, now built in sizes from 1-15 hp, are available from stock in standard and near-standard types. "Specials" in Life-Line design are available on short shipment. Other sizes and types—up to 200 hp—soon will be changed over to modern Life-Line design. Check your nearest Westinghouse office for deliveries—or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-21456-A

LONGER LIFE ON THE JOB with freedom from electrical failures is assured by Life-Line motor manufacturing methods and new insulating materials.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Life-Line motors

BUSINESS OUTLOOK

BUSINESS WEEK
SEPTEMBER 18, 1948

Continuation of the business boom into 1949—or beyond—depends more on construction than any other one factor. This has two phases:

(1) Residential. Home building is a powerful business stimulant. It affects forest and factory, building materials and home furnishings.

(2) Industrial and commercial. New plants mean work for heavy industry on machinery. Stores and theaters need show cases, seats.

•

Higher costs, as yet, don't seem to be thwarting would-be home owners.

Building material prices have crept up steadily. They now are nearly 13% higher than a year ago. They are twice what they averaged from 1939 to 1941. They're also about double what they were in 1926, the year that marked the peak of our last housing boom.

Home furnishings, at wholesale, are more than 11% above a year ago. However, they are only about half again as high as prewar. That's modest alongside the all-commodity wholesale index, which has about doubled.

Higher costs, higher down payments, dearer mortgage money—these all add up to steeper monthly instalments.

This, clearly, is dangerous. But it doesn't seem to be tripping us up.

•

Interest on mortgages has pointed higher for some time. The latest increase in bank-reserve requirements (page 108) just speeds this up.

Mortgage rates—by themselves—couldn't snag the housing boom. They make up too small a part of the package for ½% to be felt.

But they gain importance with all the other cost factors rising too.

•

Business can't slump very much with steel, autos, and construction going great guns. That has long been a business axiom; it was restated this week in the Cleveland Trust Co.'s monthly bulletin.

(We might add producers' goods to those three, for our own part.)

Steel can't have any trouble as long as it is unable to supply all the sheets the auto industry needs. That's implicit.

But here's something to ponder: How much steel can auto makers use?

Suppose a lot of other steel-using lines slacken off. The steel industry then might be able to ship auto plants enough for, say, 7,000,000 cars and trucks a year. Would Detroit be able to get the manpower?

If not, we would have our first postwar steel surplus. That, conceivably, would come quicker than a building slowdown, but it isn't likely.

•

Continued slowness in the market for old houses, visible before Labor Day, might mean that housing (at today's prices) has hit the top.

We have had several such slumps in the market for old houses in the last year and a half. They have all turned out to be false alarms.

But, one of these times, one of them will prove to be the real thing.

•

Most businessmen queried by Business Week have three major worries at the present time—rising costs, lack of skilled workers, fear of war.

Interestingly enough, very few of them mention steel shortages.

Apparently they have decided to make the best of a bad situation; they have adjusted their operations to the amount of steel they expect to get.

•

Steel makers this week are running at an annual rate of almost exactly 90-million tons. That compares with actual production of about 85-million

tons in 1947 and an expected total output of some 87-million tons this year.

If this keeps up, users will fare a bit better than they now hope.

In fact, the magazine Steel is mildly optimistic. It says: "More steel should be available to general customers in the fourth quarter than in like period of 1947 . . ."

And that allows for allocation of 9% of the supply (BW-Sep.4'48,p19).

•

Improved processes play a big part in rising steel production. They add to capacity without any actual plant expansion.

A good while ago, we hazarded this guess about use of oxygen: "This production stretcher may be the secret of why the industry has cold-shouldered Washington's urging of more basic capacity" (BW-Mar.8'47,p10).

This week, Iron Age declares: "Next year the increase in steel production due to refinements, such as use of oxygen, coal washing, increased use of sintered ore, and other production techniques will be amazing."

One plant plans a million tons more output without new equipment.

•

To boost output, the steel companies have to get more raw materials somewhere. They must rustle up either ore or scrap.

Prospects of boosting the scrap supply aren't too bright.

However, ore has been coming down the Great Lakes from the Mesabi at the highest peacetime rate ever. Shipments to the end of August were 54,569,709 gross tons compared with 51,014,783 a year earlier.

The problem is to get enough piled up at the mills to tide over the winter season when the ore boats are icebound.

•

One of the quickest shifts in a postwar supply situation has been that experienced recently in fuels.

Almost overnight, talk has shifted from shortages to oversupply. Both the coal and oil industries are hearing it.

Actually, things aren't that bright for users. If this winter is severe, there still will be spot shortages.

Even so, oil-burner makers have sent salesmen scurrying afield.

•

As everyone watches the harvesters bring in this year's bumper crops, wheat farmers already are busy with their fall seeding.

The Dept. of Agriculture has suggested a smaller acreage for harvest next summer, in view of this year's surplus. But planting conditions are excellent in the Great Plains; and the $2 price still is high.

So the average farmer says: "Let somebody else cut his planting."

In fact, the Santa Fe Ry. reports that summer-fallow acreage alone may hit 3,500,000, up about a million acres. That's the curse of guaranteed prices: They tend to perpetuate imbalance.

•

Another metal joined in the competitive race this week. The du Pont company started commercial production of titanium (heretofore used mainly as a pigment in the form of titanium oxide, page 128).

Metallic titanium enters the lists at a price of $5 a lb.

That sounds high. But remember that aluminum 68 years ago was a new metal selling at $1 an oz. Two years later, when the Pittsburgh Reduction Works opened with the Hall process, aluminum came down to $5 a lb.

Shortly Charles M. Hall and associates were able to cut it to $2. When war broke out in 1939, it was 20¢; now the base price of ingot is 16¢.

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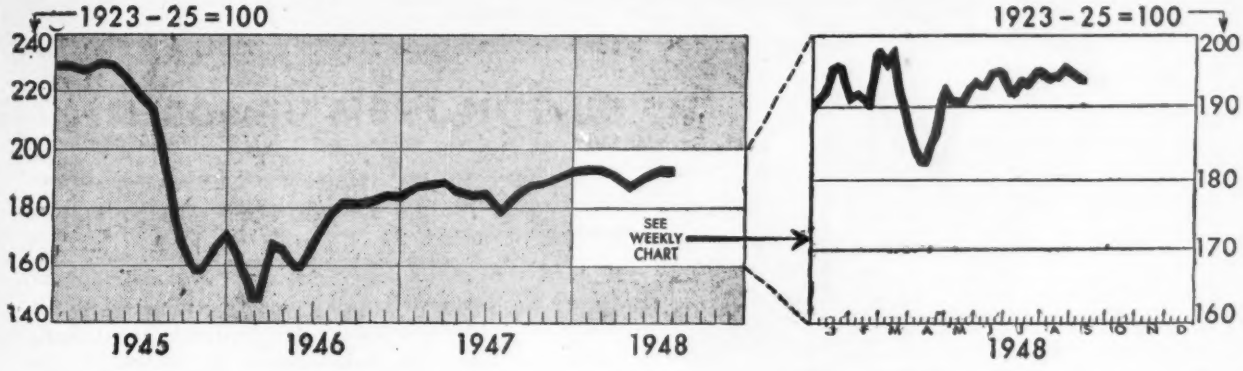
FIGURES OF THE WEEK



	§ Latest Week	Preceding Week	Month Ago	Year Ago	1941 Average
Business Week Index (above)	*194.1	†194.8	194.9	186.4	162.2
PRODUCTION					
Steel ingot operations (% of capacity)	96.1	94.5	95.0	89.4	97.3
Production of automobiles and trucks	76,792	†101,879	112,342	106,095	98,236
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)	$23,138	$20,262	$24,141	$21,590	$19,433
Electric power output (million kilowatt-hours)	5,166	5,470	5,318	5,053	3,130
Crude oil (daily average, 1,000 bbls.)	5,346	5,531	5,507	5,217	3,842
Bituminous coal (daily average, 1,000 tons)	1,983	†2,025	2,019	2,147	1,685
TRADE					
Miscellaneous and L.C.L. carloadings (daily average, 1,000 cars)	85	83	80	88	86
All other carloadings (daily average, 1,000 cars)	64	65	67	66	52
Money in circulation (millions)	$28,287	$28,072	$27,966	$28,742	$9,613
Department store sales (change from same week of preceding year)	+16%	−8%	+17%	+1%	+17%
Business failures (Dun & Bradstreet, number)	83	94	103	75	228
PRICES (Average for the week)					
Cost of Living (U. S. Bureau of Labor Statistics, 1935-39 = 100), July . . . 173.7	....	....	171.7	158.4	
Spot commodity index (Moody's, Dec. 31, 1931=100)	421.4	422.1	428.0	435.0	198.1
Industrial raw materials (U. S. Bureau of Labor Statistics, Aug., 1939=100)	278.2	279.0	279.2	270.8	138.5
Domestic farm products (U. S. Bureau of Labor Statistics, Aug., 1939=100)	345.0	346.7	355.3	391.3	146.6
Finished steel composite (Steel, ton)	$93.86	$93.86	$93.86	$75.41	$56.73
Scrap steel composite (Iron Age, ton)	$43.16	$43.16	$43.16	$37.75	$19.48
Copper (electrolytic, Connecticut Valley, lb.)	23.500¢	23.500¢	23.500¢	21.500¢	12.022¢
Wheat (Kansas City, bu.)	$2.20	$2.20	$2.16	$2.69	$0.99
Sugar (raw, delivered New York, lb.)	5.66¢	5.71¢	5.78¢	6.32¢	3.38¢
Cotton (middling, ten designated markets, lb.)	31.24¢	†31.01¢	31.30¢	32.07¢	13.94¢
Wool tops (New York, lb.)	$1.720	$1.764	$1.789	$1.745	$1.281
Rubber (ribbed smoked sheets, New York, lb.)	22.88¢	22.94¢	23.67¢	16.47¢	22.16¢
FINANCE					
90 stocks, price index (Standard & Poor's Corp.)	125.4	128.9	125.5	119.6	78.0
Medium grade corporate bond yield (30 Baa issues, Moody's)	3.45%	3.44%	3.44%	3.23%	4.33%
High grade corporate bond yield (30 Aaa issues, Moody's)	2.84%	2.84%	2.85%	2.61%	2.77%
Call loans renewal rate, N. Y. Stock Exchange (daily average)	1½-1¾%	1½-1¾%	1½%	1¼-1½%	1.00%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate)	1½%	1½%	1½%	1%	½-¾%
BANKING (Millions of dollars)					
Demand deposits adjusted, reporting member banks	46,932	†47,056	46,706	47,350	††27,777
Total loans and investments, reporting member banks	63,291	†63,231	63,034	64,292	††32,309
Commercial and agricultural loans, reporting member banks	14,931	†14,887	14,813	12,719	††6,963
Securities loans, reporting member banks	1,491	†1,480	1,545	2,027	††1,038
U. S. gov't and gov't guaranteed obligations held, reporting member banks	34,652	†34,714	34,660	38,699	††15,999
Other securities held, reporting member banks	4,416	†4,422	4,341	4,274	††4,303
Excess reserves, all member banks	1,020	940	1,050	1,015	5,290
Total federal reserve credit outstanding	21,834	21,937	22,064	22,472	2,265

*Preliminary, week ended September 11th.
†Revised.
§Date for "Latest Week" on each series on request.
††Estimate (B.W.—Jul.12'47,p.16).

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WASHINGTON OUTLOOK

RUSSIAN PRESSURE TACTICS just about cracked western unity on Berlin. Failure of the Moscow talks to lift the blockade—followed by stepped-up Soviet bullying—has had this effect:

The British and French started worrying about whether they can afford a showdown now; they would like to keep on talking in the hope that—maybe—something will happen to take the heat off. That's why they urged just one more try at Stalin.

•

Washington is fed up with talk. Marshall contends that another series of Kremlin meetings would be like Sokolovsky's obstructionism in the Allied Control Council in Berlin after Stalin promised a settlement. That's why Marshall insists that the West prepare to take the next step the State Dept. planned weeks ago—hail Russia before the United Nations (BW—Jul.24'48,p15).

He whipped the British and French governments back into line with this blunt warning: A break in the three-power bloc would mean the end of the West in Berlin—and, in the long run, in all of Europe.

•

So here's the strategy: Give Stalin one last chance to lift the blockade; another stall and the whole dispute goes to the U.N. Security Council. A Russian veto there is sure, of course. So the charge—that the Berlin blockade is a threat to peace—would be put to the General Assembly for a vote of censure.

After censure what? The U. S. really hasn't set its thinking beyond that. But you can pick up a lot of ideas around. For instance: sanctions—closing off Russia's trade with the western world; expulsion from the U. N.; use by the western bloc of an armed convoy to break the land blockade of Berlin—even if it means war.

•

TRUMAN DEMOCRATS are cracking down on southern party officials who have gone over to the Thurmond-Wright ticket. They're starting in Louisiana, where the state organization pushed the Truman-Barkley slate of electors off the ballot and substituted a Dixiecrat list.

Louisiana's national committee members are being expelled from the party. It's a warning to other wavering Democrats: Jump the traces and you'll be read out too.

This is no idle threat. Top southern officeholders who bolted to Hoover in 1928 got the axe in the 1930 party primaries.

National Chairman McGrath hasn't given up in Louisiana yet. He's got lawyers in Baton Rouge looking for loopholes in the election laws to put the Truman electors back on the ballot, but he's not very optimistic.

•

There's not much chance that McGrath will find many outstanding Democrats who will reorganize the party in any of the rebel states before election.

Those who haven't bolted are keeping quiet in the hope that they will be able to ride out the political storm.

But after November there'll be plenty of politicos who'll grab at the chance for position when the party rebuilding starts.

•

A MEATY ANALYSIS of the Supreme Court's basing-point decision came out of the Senate's Capehart committee last week.

You had better get a copy of this speech by William Simon, committee counsel, because Capehart's group is doing the looking into the decision for possible congressional remedies.

Here's what Simon gave the committee's advisory council as his interpretation of the court's decision:

You can't use basing-point pricing even to meet legitimate competition at distant points; you can't even use your own zone or universal delivered-price systems; don't count on heavy industry only being hit by the decision—because everyone's liable for damages under the antitrust acts.

And you won't ever know whether your pricing policies are legal or illegal until FTC acts, case by case.

•

AN OUTLOOK FROM ALBANY, beginning this week on page 16, is now added as a temporary department in your regular Washington Outlook.

Reason: From now on in we feel that our job—covering the effects of national political and governmental events on business—requires reporting in Albany as well as in Washington.

So, we've opened an Albany branch office of the Washington Outlook to cover Dewey and his team (at home or on the road) until they come to Washington—or lose.

We aren't predicting, in all this, that Dewey

will win. But every sign points that way. And the role of the Washington Outlook is to size up things as they are—and as they most likely are going to be.

That means that Washington judgments this fall, in part at least, must be formed with knowledge of how the Dewey team sees things.

OUTLOOK FROM ALBANY

ALBANY, N. Y.—Thomas E. Dewey, as a candidate or as a public official, leaves as little to chance as he possibly can.

You come to Albany knowing this from the record—the Philadelphia convention as the latest instance.

Here you see the heart-beat of this methodical Dewey team in operation. And here you get a preview of how a Dewey Administration would operate in Washington.

•

TODAY, the men in the foreground are Elliott Bell and his research and speech-drafting team. They're assembling the ideas, the facts and figures, the phrases that will become Dewey's campaign addresses—beginning next week at Des Moines.

They have been at work for more than a month now, in a round-the-clock, home-and-office setup on the fourth floor of Albany's DeWitt Clinton Hotel.

They have assembled a catalogued roomful of documentation to anticipate the questions that might confront their man during the campaigning. They have briefed themselves on all the issues they can think of—national and sectional—to be able to help Dewey with a well-thought-through answer on anything that may pop up.

•

Bell's assignment on the Dewey team is the strategy of the speech-making side of the campaign —what to say, where to say it, and when.

It's to Bell that Dewey tosses the complicated problems. For instance, what about the grim details of cutting the cost of government? Bell's staff builds a library of facts, chews over the subject hours on end, comes up with a framework within which Dewey will talk.

Perhaps most of what you'll be hearing Dewey say over the next weeks will have had its origin in these DeWitt Clinton Hotel bull sessions.

Elliott Bell is, of course, the mainspring of this idea and fact factory. He's formally New York State Superintendent of Banks, an intimate of Dewey's since the gang-busting 1930's.

John Burton is another of the Dewey team working with Bell. He's State Budget Director and heads up the research end of the job.

U. S. Sen. Henry Cabot Lodge, a Vandenberg supporter at Philadelphia and an old friend of Bell, volunteered his services. Rep. Everett Dirksen divides his time between the DeWitt Clinton and Warren's vice-presidential train.

Edwin H. Jaeckle, veteran Erie County (Buffalo) G.O.P. boss, is the professional politician among these political idea-men.

The others—five in all—are lesser known: Arthur Barnett, Hiram College classmate of Burton; Stewart Beach, who was with Dewey at the University of Michigan; Stanley High, of Reader's Digest; Merlyn S. Pitzele, on leave as labor editor of Business Week; Robert P. Ray, fresh from a philosophy doctorate at Iowa.

And in New York's Roosevelt Hotel, deliberately separated from the staff here, are the foreign policy campaign planners: Brothers John Foster and Allan Dulles, Rep. Christian Herter and Mac George Bundy.

This is a young crowd. Except for Jaeckle and the elder Dulles, probably none of them tops 50; Ray is only 26. But, omitting the congressmen, there's already an average of nearly a decade of this sort of work for Dewey behind them.

•

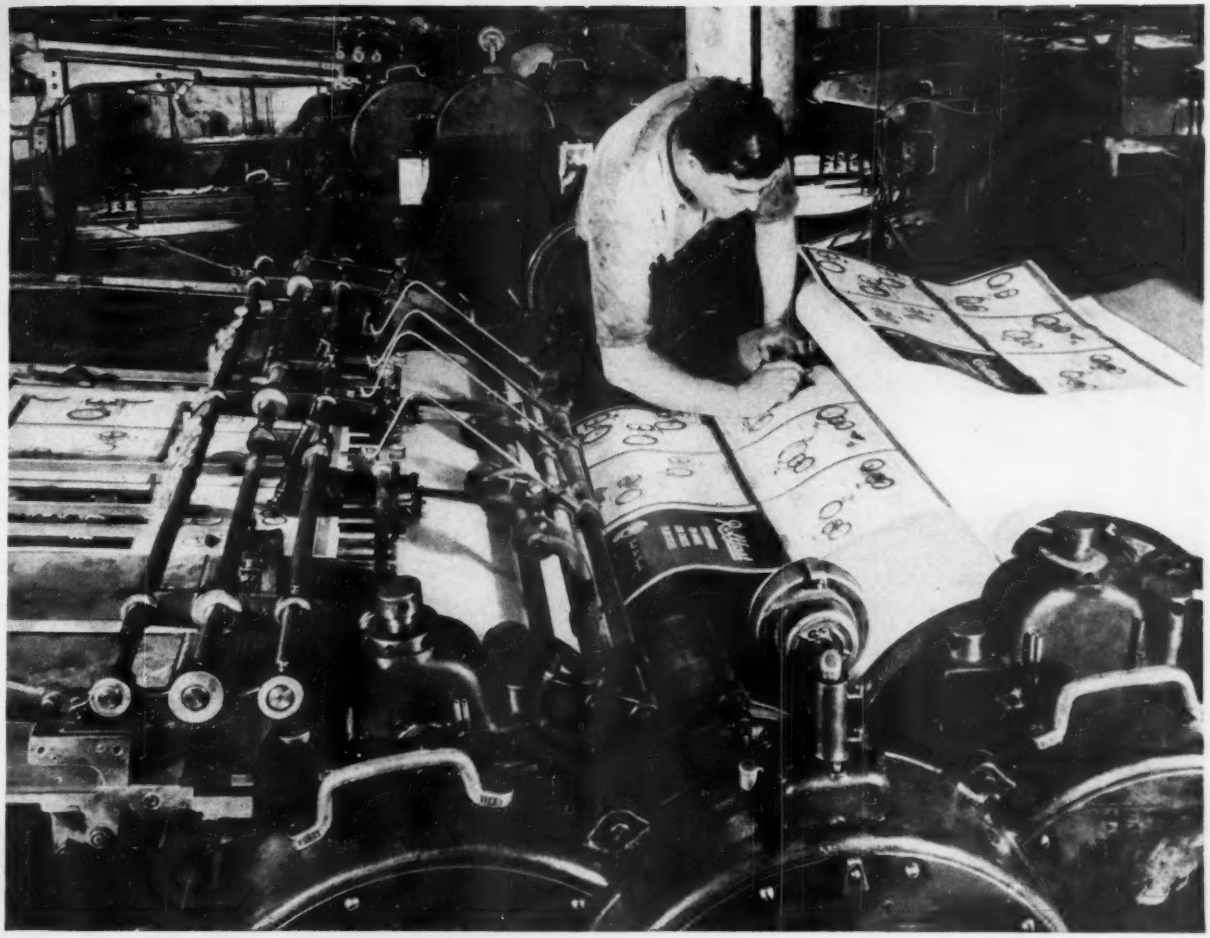
TOMORROW—roughly after election, that is —the emphasis in this Dewey habit of detailed advance preparation will shift from Bell to Charles Breitel.

Breitel, the governor's counsel, is the member of the Dewey team whose assignment is to measure the dimensions of the Washington job and to prepare a Dewey program for the takeover in January.

His job is quiescent now; the Dewey people won't count their man elected until Nov. 2.

But certain preliminaries are under way already: John Burton's research for Bell's campaign job, for instance, will provide a nucleus of material for Breitel later on. Burton himself is the link between Bell and Breitel, will shift to the "takeover" operation when the campaign is finished.

There, in itself, you have a sample of the way things are dovetailed in advance on the Dewey team.



High-speed two-color cylinder press in a large modern printing plant.

The Printing Industry helps YOU spread information in permanent form

Some things we take for granted . . .

Almost every adult in the nation gets his own daily copy of his favorite newspaper, his own copies of magazines and books.

In no place but America do men identified with the printing industry produce, in such huge quantities, so many publications covering subjects as varied as reader's tastes . . . from nursery rhymes to scientific treatises . . . from fiction to communiques that bring world news to your doorstep.

Printed pieces leave their stamp on daily life in home, office and plant . . . in city and on farm. In fact, few industries have played so great a role in shaping the thoughts of people, the services demanded and products produced.

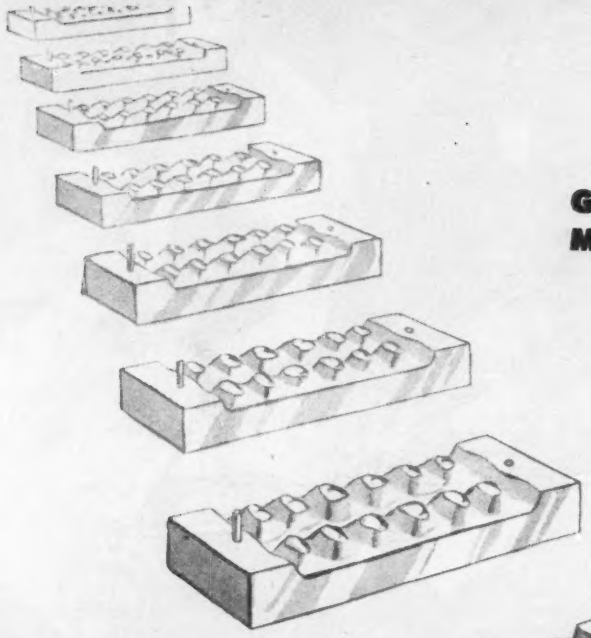
The efficiency with which modern equipment produces newspapers, books, magazines, catalogues, mailing pieces, etc., reflects the remarkable inventive genius and engineering skill of the designers and builders of our nation's amazing presses and allied equipment.

For years the technical staffs of International Nickel have worked hand-in-hand with engineers, designers, metallurgists, research and production men in the graphic arts on a wide range of metal problems. To this extent INCO has contributed to the continuing improvements in performance of equipment in the printing industry.

Through this and comparable experience gained in technical service throughout industry, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, cast irons, brasses, bronzes, nickel silver, cupronickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.

EMBLEM OF INCO SERVICE
TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC. NEW YORK 5, N.Y.



G-E SILICONES HELP MOLD BETTER TEETH

How G-E Silicones can help you

An increasing number of manufacturers are finding tha General Electric silicones help them turn out better products or improve their production methods. These chemically inert, high-heat-resistant materials may be just what you've been seeking in *your* industry.

A molder of artificial teeth, for example, is using a G-E silicone emulsion as a mold release agent. He reports that his rejects, which normally ran around 20%, have been reduced to *almost zero* by the use of this amazing fluid!

Other molders of rubber and plastics have also been using G-E silicone oils and emulsions with marked success. The stability of these materials keeps them from building up in molds. Moreover, General Electric silicone oils may be applied to *hot* molds without danger of decomposition at exceptionally high temperatures.

G-E Silicones Will Improve Finishes

Have you heard about G-E silicone *resins*? When available for synthetic enamels for kitchen ranges, automobiles, and other products, silicone resins will make possible a finish with characteristics of durability and sunfastness never before achieved.

WANT TO KNOW MORE ABOUT G-E SILICONES? We'd like to tell you *all* about these amazing materials and how they may help *you* in your particular industry. Chemical Department, General Electric Company, Pittsfield, Massachusetts.

SILICONES for Industry

Please address inquiries about G-E silicones to Resin and Insulation Materials Division, Chemical Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

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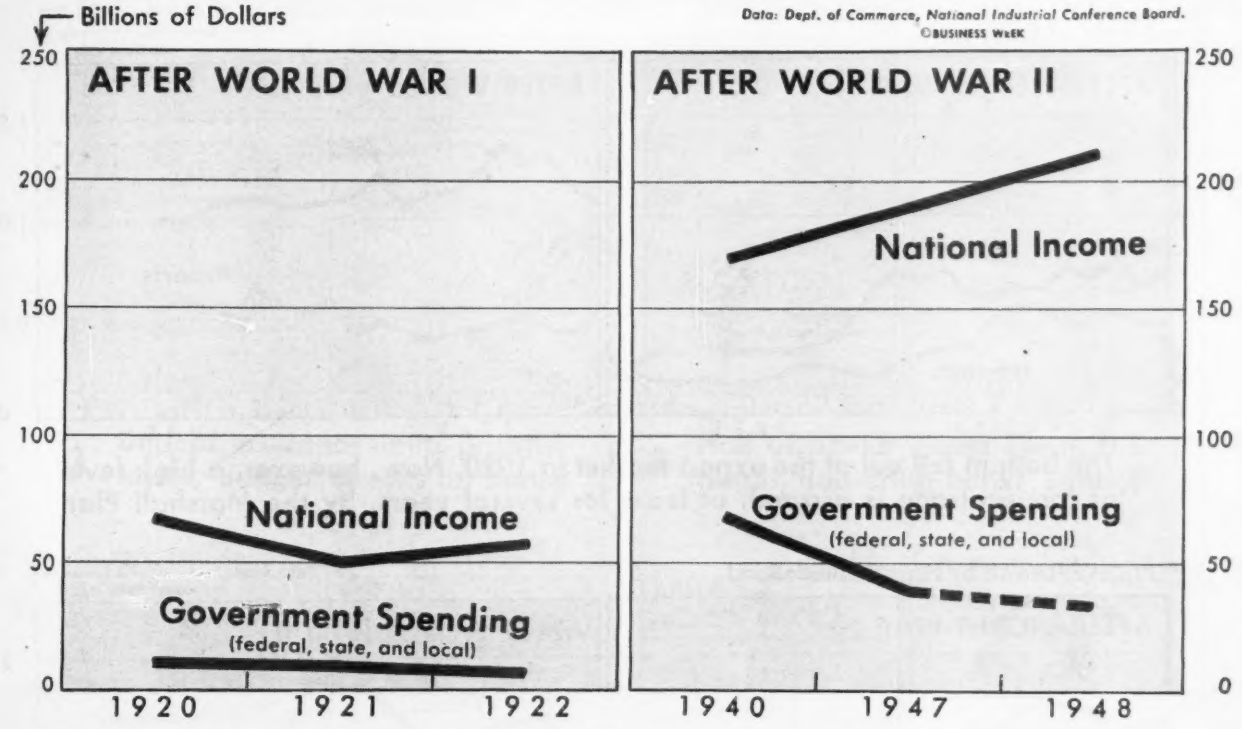
BUSINESS WEEK

NUMBER 994

SEPTEMBER 18, 1948



Supporting America's High-Level Economy

Government spending bolsters business boom. Many other props, weaker or nonexistent after World War I, shore us up today.

This week again, bumper crops looked a sure thing. How much will the government have to support them? In an election year, that becomes a hot topic—as does the whole subject of use of federal, state, and local funds.

High government spending, by itself, doesn't guarantee a happy and prosperous economy. But high government spending (chart, above), in combination with a lot of other economic fortifiers, goes a long way toward explaining why we haven't yet had that much-heralded postwar "recession."

• **Difference**—Going by what happened after World War I—as too many people did—the decline in business activity is long overdue. But there are a lot of differences between 1919, 1920, and 1921 and 1946, 1947, and 1948.

Not the least of these has been the role of government. Federal, state, and local bodies will pay out over $50-billion in the coming year.

• **If Income Slides**—With tax collections high, and the federal budget balanced, the national government's activity is more powerful as a prop than a boom-builder. In the future, government money could become much more important, for government spending won't be pared much if national income starts to slide. Tax revenues, of course, would toboggan. Thus, government spending would increase as a share of national income—and deficits would pump up the credit supply.

Also, the federal government is committed to support two segments of the economy that collapsed disastrously in 1920. These are:

(1) **Farming.** When farm prices drop an average of 25% from current levels, the government is obligated by law to come to the rescue. (It already is supporting such commodities as potatoes, wheat, and flaxseed.) Meantime, farmers are in excellent condition to weather some decline in prices from recent record levels. Their income is the highest ever. They have piled up almost $25-billion of liquid assets. They have pared their mortgage debt.

(2) **Exports.** Marshall-Plan aid will support a large volume of exports for several years. Eighteen months after World War I, the government shut off foreign loans and exports skidded.

• **Other Supports**—Then, for the present period, there are unemployment-insurance trust funds amounting to $8-billion.

The general financial framework is extraordinarily sturdy. Banks' assets are dominantly government bonds and cash. Deposit insurance guards bank deposits up to $5,000.

Housing demand (aided by government mortgage insurance) perhaps calls for a million dwelling units a year for several years—unless high prices and lack of mortgage money get in the way.

Highway needs and other public works provide a stupendous backlog.

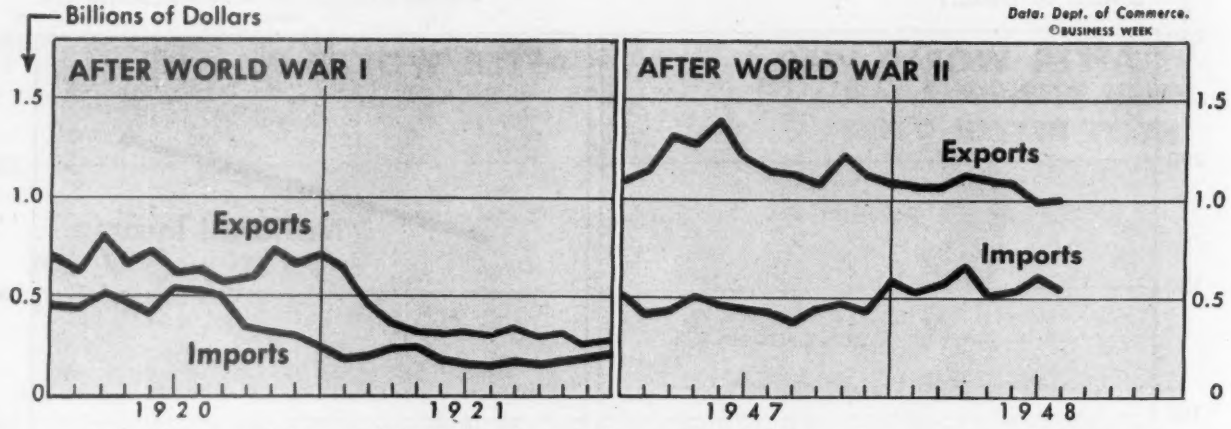
• **Nongovernment Props**—Consumers in general are better off than after World War I. People have saved $160-billion since 1939—and the savings are broadly distributed.

It's harder to appraise the still-unsatisfied demands of consumers. Surely, they're large. Auto makers figure present orders equal two years' output.

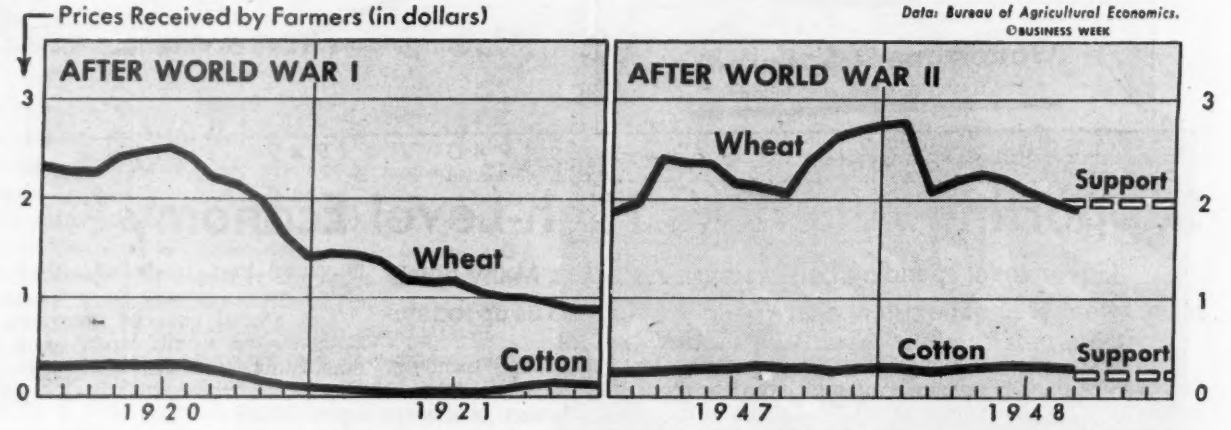
• **Cushion**—It's true, of course, that not all the props are an unmixed blessing. Government spending comes out of the taxpayer's hide; high wage rates limit price cuts for consumers; so do farm price supports. But, in the aggregate, the props afford at least a deep cushion for any recession.

—For a chart presentation of the economy's supports, turn to pages 20 and 21.

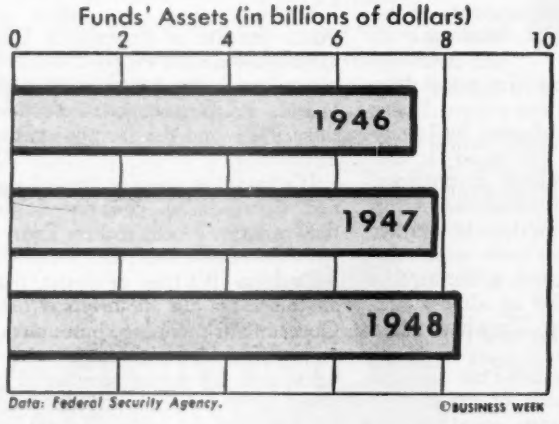
Supports Prop Up Over-all Demand



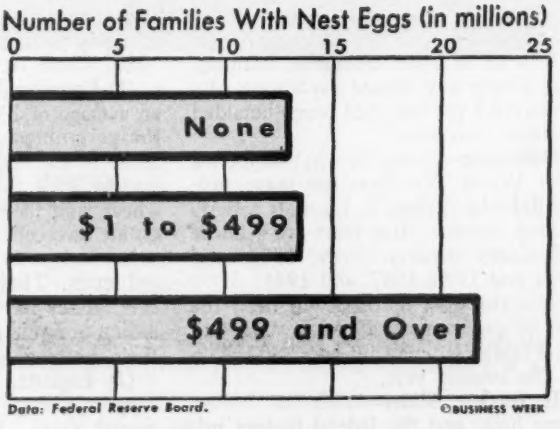
1 The bottom fell out of the export market in 1920. Now, however, a high level of foreign trade is assured, at least for several years, by the Marshall Plan



2 Big crops and dwindling demand sent prices crashing in 1920. For 1948 and 1949, Congress has continued wartime supports, with sliding-scale aid in 1950

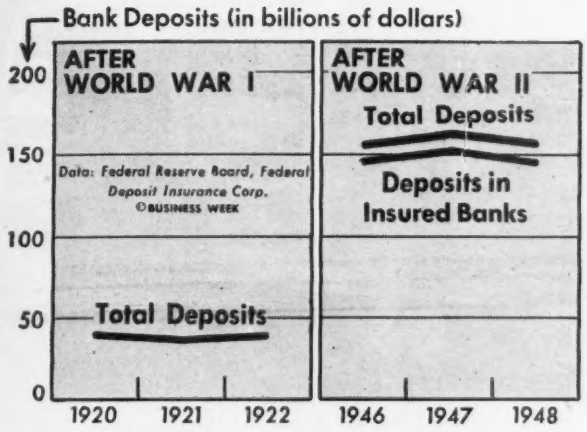


3 Compensation funds are big enough to carry 8-million men for a year

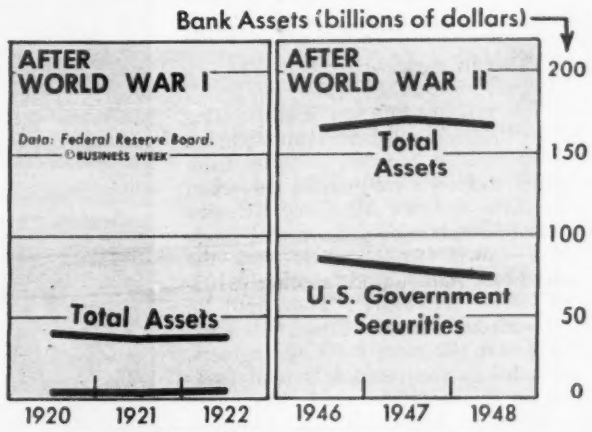


4 Holdings of liquid assets are bigger, wider spread than ever before

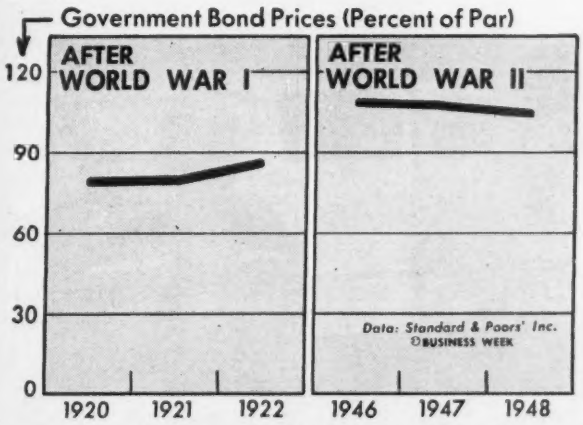
Supports Prop Up Financial Structure



1 Deposit insurance limits possible losses, danger of runs on banks

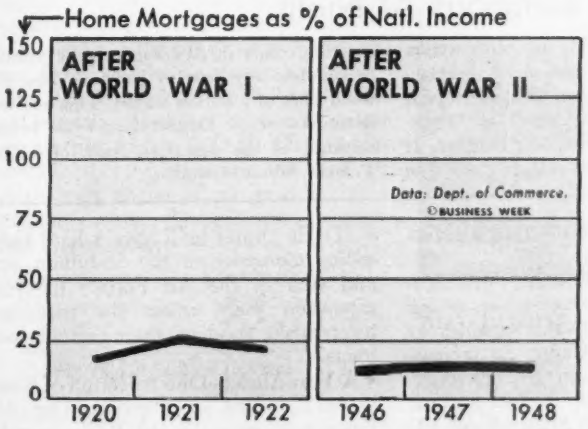


2 Half of banks' assets are in U.S. bonds, bolstering banks' strength

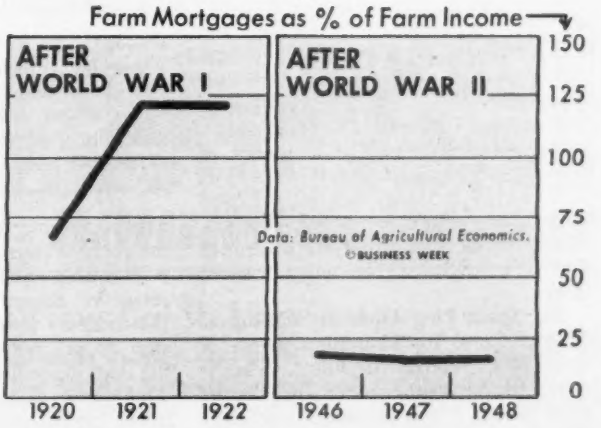


3 Government bonds are unlikely to go below par because of support

4 Bank failures, unlike times past, have virtually disappeared



5 Home mortgage debt is rising but still is low in relation to income



6 Farmers have whittled mortgage debt while cash income has soared

More Warplanes

Air Force announces new orders for $103-million worth of fighters and bombers. Symington hits lag in deliveries.

New military business is still rolling in to the busy airplane manufacturers. Their outlook changed abruptly from famine to feast three months ago—when the Navy and the Air Force allocated almost $2-billion of procurement funds (BW—Jun.19'48,p26). Last week the Air Force announced another $103-million of new orders. They went to:

Lockheed Aircraft Corp., Burbank, Calif., for 100 more F-80C jet fighters. This brings the company's total backlog on this plane to nearly 800.

Republic Aviation Corp., Farmingdale, Long Island, for 100 more F-84E jet fighters. That makes a total of 1,100 F-84's on order, of which about 300 have already been delivered.

Boeing Airplane Co., Seattle and Wichita, for 13 more B-50C four-engine long-range bombers. Boeing is now scheduled to build 33 of these planes. The B-50C will be quite different from its predecessors in the B-50 line—so different that the Air Force is changing the plane's designation to the B-54, a completely new type. One major change is the use of the new Pratt & Whitney variable-discharge-turbine engine.

• **Source of Money**—The $103-million came from the $199-million in Air Force funds frozen last June by presidential order. Largely because of the present international situation, Defense Secretary James Forrestal last week pried loose the $103-million; he is studying allocation of the remaining $96-million.

The Navy still has about $100-million of its fiscal-1949 funds frozen by presidential order; it is expected to ask for approval to pour this into additional contracts early next month.

• **Other Contracts**—Both the Navy and the Air Force also announced new contracts from funds previously released. They went to:

Goodyear Aircraft Corp., Akron, Ohio, for design and development of the biggest blimp in Navy history. It will be 324 ft. long, will use 825,000 cu. ft. of helium, and will carry an 84-ft., double-deck cabin for a crew of 14. It's intended for antisubmarine work.

AC Spark Plug Division of General Motors Corp. for $1-million worth of spark plugs for the Air Force. This is a record peacetime order for aircraft spark plugs; it will provide about 285,000 of them for Pratt & Whitney Wasp Major engines.

SKF Industries, Inc., Philadelphia, which announced substantial new orders for airplane bearings.

• **Warnings**—Meanwhile, Air Force Secretary W. Stuart Symington was giving the industry sharp private warnings to step up production. Cause: an increasing lag in military aircraft deliveries. This worries Symington for two reasons:

(1) He believes the international situation demands that the proposed modernized air arm become a reality as soon as possible.

(2) He thinks he'll have a hard time selling Congress on the $6-billion second step in the Air Force's five-year expansion plan unless the manufacturers make good on their current contracts.

• **A Year Ahead**—One reflection of Symington's feeling of urgency: The Air Force now plans to put Boeing's radically designed B-47 swept-wing six-jet bomber into production early next year—a full year sooner than planned.

Station Wagon with Special Panels . . .

. . . Becomes Luminous At Night

During the day it looks like any other station wagon. But at night it darts along the highway like a phosphorescent fish in tropical waters. A special sheeting, made by Minnesota Mining & Mfg. Co., is the secret. It shoots back lightrays without any glare. The sheeting comes in all colors, can be printed to simulate any type of paneling, like the wood sides of a station wagon. This one was demonstrated in Detroit last week before members of the American Assn. of Motor Vehicle Administrators.

High Employment Is Too Low

More than 61-million Americans held jobs during August, setting a new record. But manufacturers still can't find enough workers, especially in the skilled and semi-skilled categories.

The number of Americans gainfully employed last month—61,245,000—set a new record for August. This Census Bureau total, out last week, was 1.5-million higher than the corresponding figure of a year ago. But the fact brought little comfort to machine manufacturers in Milwaukee, or to contractors in Columbus. Like many businessmen, these employers have been forced to cut production for lack of enough workers.

• **Job-Hunting, Too**—You can't explain away this scarcity in the midst of plenty by saying that boom demand generally has outstripped the supply of labor. The facts prove just the opposite: 1,941,000 men and women were out of work and hunting jobs last month—only 155,000 less than a year ago. But shortages of special skills do crop up locally with irritating frequency.

In some cases, the labor stringency isn't the back-to-the-wall kind. Hard-up employers can often get the workers they need by (1) paying wages that compete with those of neighboring firms, or (2) offering steeper premiums for such work as third-shift operations.

• **Lack of Skills**—On the other hand, some types of workers can't be hired for love or money; high skills don't just develop overnight. And lack of a few skilled men can keep many semi-skilled and unskilled workers off payrolls.

But few manufacturers are lowering job standards—taking on inferior workers—to staff their plants. They refuse to hire just anyone to fill a hole, even if this attitude means lower output.

• **Two Causes**—The increase in the labor force over last year is due to two main factors. The first is the long-term trend toward a larger and older population; the second is the pressure of higher living costs, which has thrust housewives into jobs in efforts to make ends meet.

Generally speaking, these new workers are not highly skilled. Thus, widespread labor stringencies can and do exist—even in areas of general labor surplus—among the following specialized occupations:

Metal-working:	Construction:
Tool and die makers	Bricklayers
Machinists	Electricians
Pattern makers	Loom fixers (textile)
Molders	Stenographers
Millwrights	School teachers
Skilled miners	Scientists, engineers

• **Other Shortages**—In addition, other types of workers are in short supply in particular regions. The U. S. Employment Service, which regularly surveys the nation's labor markets, reports tightness in one occupation or another in 35 out of 138 areas. Here is a recent sampling:

Canton-Massillon-Alliance (Ohio)—3,000 workers urgently needed—such as steel mill hands, printers, cranemen.

Quad cities (Illinois-Iowa)—Foundry laborers, salesmen, sewing machine operators needed to fill some of the 2,500-4,000 vacant jobs.

Milwaukee—Jobs waiting for 5,600 machine and metal, leather, construction, food-processing, and professional workers.

Sioux Falls, S. D.—Local industrial and food-processing plants require about 1,000 unskilled laborers. That's equal to 5% of the existing work force.

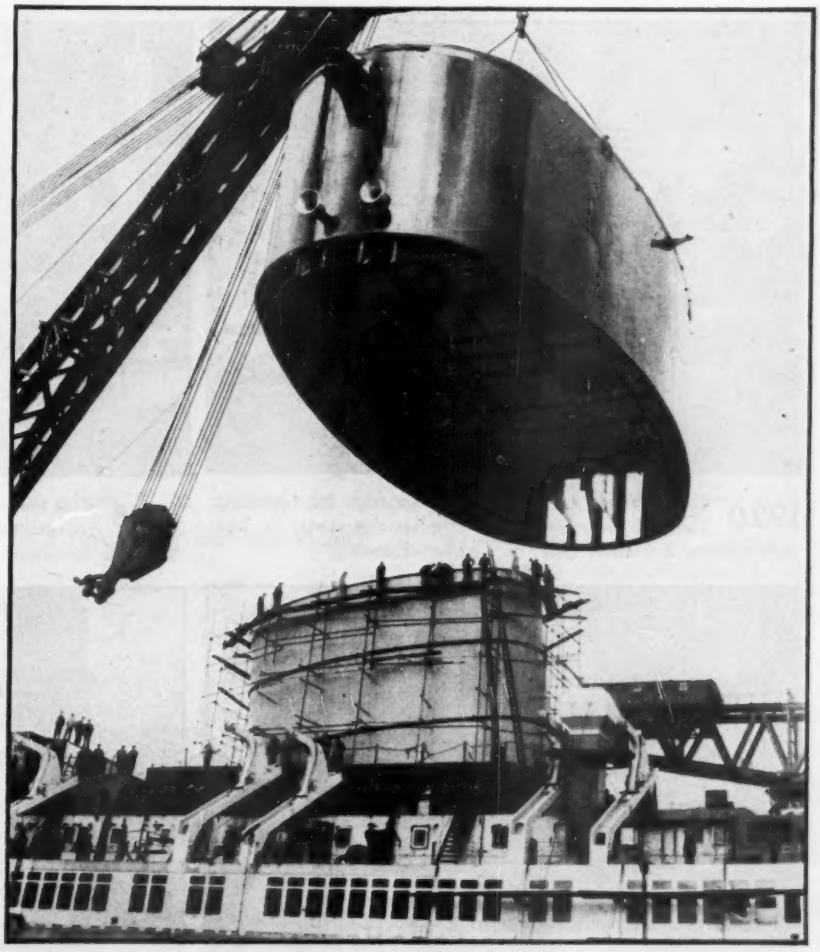
Dallas—About 3,000 aircraft machine, construction, clothing, and service workers currently needed.

• **Gain—or Loss?**—In the year to come, the supply of available labor is slated to increase by about 750,000 workers as a byproduct of national population growth. But it stands to lose at least a million—and maybe more—if:

(1) Draft quotas should be raised;

(2) The defense program diverts manpower from civilian production;

(3) The ECA program in manufactured goods begins to roll.



Big Funnel for New British Liner

This huge funnel is a heavyweight finishing touch for Britain's new liner Caronia, now being built for Cunard-White Star at a Scottish shipyard. The stack weighs 125 tons, and is 53 feet long. Cunard expects the 34,000-ton ship to be ready for commissioning in a few months. It is designed to join the Queen Mary and Queen Elizabeth on transatlantic runs. But it can pinch-hit as a cruise ship, too—with two outdoor swimming pools and lifeboats outfitted as passenger tenders. In either service, Britain looks to the Caronia as a rich source of American dollars. It will carry around 1,000 passengers.

1902 This was the New York Central's first Twentieth Century Limited, a "de luxe" five-car train which made the New York-Chicago run in 20 hours. Entire train cost $115,000

1948 This week a Century with 16 brand-new cars went into service. It's pulled by double-unit, 4,000-hp. locomotives, makes the run in 15¼ hours. Total train cost: $2-million

Progress of N. Y. Central's 20th Century

1920 The Century was always a popular train for executives. The club car soon became a fashionable center for business confabs, a friendly chat, or a game of cards

1948 This new version of the club car includes the traditional conveniences of a barber, train secretary, plus a train-to-city radio telephone, a shower bath as well

1927 The Century breaks out with its famous observation-car trademark. Already the train of the famous, demand to get on it was so great that it often ran in several sections

1948 This observation car, like all the sleek new cars on the Century, was built by Pullman-Standard Mfg. Co. Made of alloy steel, they are custom-built to strict specifications

Where ECA May Get Strategic Materials

Belgium	
Belgian Congo	Copper, tin, cobalt, industrial diamonds, zinc, tantalum, columbium, urathrum, vegetable oils nium, cadmium, pyre-
Denmark	
Greenland	Cryolite
France	
New Caledonia	Chromite, nickel
Morocco, Tunisia	Lead, cobalt, manganese
French Equatorial Africa	Lead, zinc, copper, tin, diamonds
French West Africa	Manganese, vegetable oils
French Guiana	Bauxite
Madagascar	Graphite, mica
Germany (western zones)	Steel scrap
Greece	Bauxite, lead
Italy	Antimony, cadmium, lead, zinc, mercury
Portugal	Beryllium, tungsten, tin
Angola	Industrial diamonds
Mozambique	Corundum
Netherlands	
Surinam	Bauxite
Netherlands East Indies	Tin, rubber, cordage fibers, petroleum, pepper, bauxite, nickel, quinine, vegetable oils, manganese
Norway	Zinc, aluminum
Turkey	Antimony, chromite, petroleum, bauxite, manganese
United Kingdom	Tin, china clay
Northern Rhodesia	Chromite, cobalt, copper, lead, zinc, mica, vanadium
Tanganyika	Lead, mica, industrial diamonds, cordage fibers
Gold Coast	Bauxite, manganese, industrial diamonds
Kenya	Pyrethrum, cordage fibers
Uganda	Beryllium, titanium, tantalum
Nigeria	Tin, tantalum
Sierra Leone	Chromite, manganese, industrial diamonds
Malaya	Tin, rubber, vegetable oils
British Guiana	Bauxite
Jamaica	Bauxite
China	Antimony, tin, tungsten

Building U. S. Stockpiles Under ECA Program

Strategic Materials Division's job is to locate, develop, and procure scarce commodities as a return for our world aid.

A great deal has been said about how much the United States is going to give or lend to the Marshall-Plan nations through the Economic Cooperation Administration. But very little has been said about what the U. S. is to get in return. Strategic materials are a case in point.

This week ECA's Strategic Materials Division announced it has swung the first of these peacetime "reverse lend-lease" deals. The U. S. emergency stockpile will be richer by 2,000 tons of sisal (cordage fiber) and more than 25,000 tons of high-grade rubber. The commodities will come from the sterling area, and will be paid for almost entirely in pounds by the British government.

• **The Laws**—Here's how it works: The Foreign Assistance Act of 1948 (the ECA law) provides that each Marshall-Plan country must set up a special fund in its own currency. The size of the fund—known as a "counterpart fund"—will approximate the total of the grants made to the country from ECA aid.

The law also provides that participating nations must make available to the U. S., "by sale, exchange, barter, or otherwise," reasonable quantities of strategic materials of which this country is short. And the ECA appropriation act of last June says that at least 5% of each special local-currency fund must be made available for the purchase of such commodities.

• **New Division**—That's the reason the Strategic Materials Division was set up. It's a fairly new outfit, having first seen the light of day only last July. When it gets rolling, it should do a lot to ease the problems of the U. S. stockpilers (BW—Sep.4'48,p22).

There's a big job to be done first. Buying the strategic materials is only one of the division's problems. Under another section of the ECA law, the administrator must "promote . . . an increase in the production" of such strategic materials in the Marshall-Plan countries. That task, too, has gone to the division.

• **Investments**—So, in addition to straight purchases of copper, tin, bauxite, rubber, and other materials (table, above), the earmarked funds are likely to go into capital investments to expand the output of needed materials.

Thus, Dutch guilders may be spent to build up tin output in Sumatra; French francs to increase production of mica in Madagascar; Turkish pounds to step up chromite mining in Turkey; British sterling to expand manganese output on the Gold Coast of Africa.

In one case the earmarked funds may go into plant expansion; in another, to modernization projects; in still another, to new developments and exploration. And in situations where transportation is the bottleneck—where there's plenty of material if only it could be moved—the earmarked funds may go to remedy this drawback.

• **Local Deficiencies**—In writing this part of the ECA act, Congress was fully aware that the production of strategic materials in western Europe is currently less than its over-all requirements—so

the countries themselves can spare little for our stockpile.

True, in many Marshall-Plan areas there is plenty of strategic stuff to be had. But uncertain political and economic conditions are enough to keep investment capital sitting in the storm cellar. It is only by providing some means of financing an expansion in present output that the U. S. can afford to cut itself in without reducing the volume of strategic materials normally marketed in world commerce.

Investments in lifting production are not necessarily restricted to the 5% in earmarked funds. It may well turn out that some of the countries will use a portion of the remaining 95% in "blocked" local currencies to launch any one of a number of other expansion projects. Marshall-Plan countries may also apply part of the $1-billion in ECA loans toward boosting strategic-materials output.

• **Another Duty**—The division has one more big job: It is to see that the U. S. gets fair treatment from ECA countries when it comes to buying, or developing new sources of, needed materials. This point goes back to the promises made by China and western Europe to undertake certain fiscal, production, trade, and other measures in return for Marshall-Plan aid:

(1) The ECA countries agreed to negotiate a "schedule of minimum availabilities . . . for future purchase and delivery of a fair share of materials which are required by the United States as a result of deficiencies or potential deficiencies in its own resources, at world market prices. . . ." This is to protect American industry's access to needed materials—and at reasonable prices.

(2) ECA countries pledged to treat American enterprise on an equal footing with their own nationals. This should encourage U. S. capital to launch new development projects in western Europe or its colonial territories. It stacks up as a good bet, because American nationals are eligible to apply to ECA for a convertibility guaranty covering new, productive investments in Marshall-Plan countries (BW—Jun.19 '48,p117). Administrator Paul Hoffman can raise as much as $300-million to assure that U. S. companies investing abroad are able to change into dollars the francs, sterling, or other local currencies they earn from approved projects in ECA countries.

(3) The various countries are to negotiate, where practicable, "an agreed schedule of increased production . . . and for delivery of an agreed percentage of such increased production to be transferred to the United States on a long-term basis in consideration of assistance furnished. . . ." This clause gives the U. S. a look-in on whatever "surplus" materials Marshall-Plan countries may come up with. Aside from that, it gives those countries a chance to repay a portion—if not all—of their ECA loans in the form of strategic materials rather than dollars.

• **Power Limited**—It won't be easy for the Strategic Materials Division to put its jobs across. ECA legislation seems to give the agency plenty of power, but that power is qualified by several technicalities.

The law has much to say about offsetting "deficiencies or potential deficiencies" in U. S. resources. Would that extend to materials such as wood pulp or basic chemicals?

To take another case, consider the ECA countries' obligation to expand production of strategic materials and to commit a portion for U. S. consumption. Exactly how do you go about assuring that a given nation will direct the output of its mining industry so as to fulfill that obligation, and yet not impose undesirable controls on private enterprise?

• **Congress Will Watch**—Such problems can be multiplied. They're puzzlers which—one way or another—ECA and the division will have to solve. If they don't, Congress will be wanting to know the reasons why when it gets around to voting new money next year.

Tire Business Moves at Brisk Pace

The tire business is hitting the high level that was predicted for it after the minor setback early in the year (BW—May 22'48,p21).

• **Near the Top**—Last week the Rubber Manufacturers Assn. reported that for the first seven months of the year shipments of all tire casings totaled 45.7-million. This lags behind the 52.2-million shipped during the same period in 1947, the industry's banner year. But it means that 1948 is running just about neck and neck with 1946 for second place.

During July, passenger tire casings chalked up a 1.2% increase in shipments over June (6,559,976 as against 6,480,927). However, July shipments of bus and truck casings were off 2.9% (1,305,968 as against 1,345,758). Automotive tube shipments were up very slightly.

• **Inventories Down**—Inventories are shrinking. During July, stocks of passenger car casings dropped 11.4% from June (to 8,253,829 from 9,323,461). Stocks of bus and truck casings dropped 7.5% (to 1,952,751 from 2,111,699). This decline in inventories reflected a cut in production during July, which slipped 12% over-all from the month previous.

Stainless Tightens

Sellers' market develops again for shiny steel. Carnegie-Illinois and Republic cut out discounts to warehouses.

A few months ago, the supply of stainless steel was a bit ahead of demand (BW—Dec.13'47,p36). By this week it was the other way around again: Manufacturers couldn't get enough of the shiny sheets and strips. Here's why:

NEW USES for stainless are being developed, familiar ones extended.

THE CARBON STEEL SHORTAGE has in some cases forced desperate manufacturers to use the much more expensive stainless.

One sign that stainless has entered a sellers' market appeared recently: Carnegie-Illinois Steel Corp. (subsidiary of U. S. Steel) and Republic Steel Corp. cut out discounts on stainless to warehouses.

• **The Markets**—Because it's still a young industry, the stainless steel business isn't sure yet where its main markets will be. But it's certain that the chemical and food-processing fields will eventually be big customers for a metal that doesn't corrode.

Now, the auto industry takes a lot of stainless for trim. Washing machines, refrigerators, and other household appliances are major consumers of stainless. A "clean" metal, it's used in soda fountains, beauty parlors, operating rooms, and other places which have to be especially sanitary.

• **Output**—Stainless production for the first six months of this year was about 300,000 tons. If it continues at that rate, 1948 will set a new high point on the rising production curve of the shiny metal. The previous peak was 550,000 tons, in 1946.

It's not surprising that prices of stainless are moving up. Allegheny Ludlum Steel Corp., one of the big producers, raised stainless prices about 10% about a month ago. But Carnegie-Illinois, another major producer, acted differently. It raised the prices of some stainless grades substantially, but made very small boosts on other grades. The reason it gave: Some grades cost more to fabricate than others.

Some observers think it likely that Allegheny will have to readjust its prices downward on some grades to the Carnegie-Illinois level. But there's a new factor to be considered: Last week the price of ferrochrome went up. Ferrochrome is the form in which chromium enters the stainless steel alloy. It makes up a good-sized proportion of the mix.

We Invite You to Share Our Century of Experience

A collection of all the Ryerson steel literature published during a century of service to American industry would make quite a shelf load. Just a few bound volumes are pictured here. Dating from pre-Civil War days to the present, they are solid evidence of the steel experience that works for you at Ryerson.

The Ryerson Journal of a quarter century ago lists the nation's first stainless steel stocks. Another volume is evidence that Ryerson led the way in bringing carbon steel stocks up to high quality standards. And in a more recent book is the first plan for buying alloy steel from stock on the basis of hardenability.

Unfortunately, current demand is causing many shortages. But when your requirements are not on hand, Ryerson specialists who know the adaptability of every steel can often furnish practical alternates. Certainly great personal interest and volumes of experience will be brought to bear on your problem.

There's a Ryerson plant within short shipping distance. So, whether your requirements are measured in pounds or tons, call when you need steel from stock.

Principal Products: **Carbon, Alloy and Stainless Steels—Bars, Structurals, Plates, Sheets, Tubing, Reinforcing, Machinery and Tools**

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or swim?
Water can be the difference between success or failure! So check your plant's water. Is it properly conditioned to best meet the requirements of your manufacturing processes?
If so, quality should be high, and production costs should be low.
If not, Permutit engineers will appreciate an opportunity to study your water problems, and, in cooperation with your engineers and consultants, suggest water conditioning equipment which will best adapt your water supply to your specific needs.
Write to The Permutit Company, Dept. BW-9, 330 West 42nd St., New York 18, N. Y., or to the Permutit Company of Canada, Ltd., Montreal.
Permutit
WATER CONDITIONING HEADQUARTERS FOR 35 YEARS

BUSINESS BRIEFS

G. E.'S STEEL BILL has been hiked $8-million a year by (1) recent boosts in steel prices, (2) new freight rates, and (3) by the steel industry's adoption of f. o. b. pricing. The estimate was made last week by General Electric vice-president Harry L. Erlicher. F. o. b. pricing's share in the hike: $500,000.

U. S. RUBBER is entering the apparel-fabric industry. It has started weaving cotton and rayon cloth for men's and women's wear at its Seaboard Mills, Burlington, N. C. Main reasons: to stabilize company's spinning operations (for tire cords), to diversify.

INTERNATIONAL HARVESTER has lifted prices on farm implements, tractors, and industrial power products. The increases vary widely, average 9% on farm tractors. This is the third increase on farm implements and the second on farm tractors since I. H. tried last year to stem the inflation tide with a $20-million-a-year price cut (BW—Mar.15'47,p16).

CHESAPEAKE & OHIO wants to sell its place in line for 71 of 192 sleeping cars it has on order from Pullman-Standard Mfg. Co. Price: About $13-million. C. & O. ordered the cars in 1946, at $90,000 each. Deliveries, held up by labor and materials difficulties, are now scheduled for late 1949. By that time, C.&O. figures, the cost may have risen to $185,000 each, under an escalator clause.

NYLON PRICES went up an average of 7% this week for yarn and staple fiber. Du Pont made the boost effective on all new business booked after Sept. 10. It also made a slight rise in some viscose-process rayon yarns.

HIGHER ELECTRIC POWER RATES may lie ahead for 2,500 big commercial and industrial customers of Cleveland Electric Illuminating Co. C. E. I. has asked Ohio's Public Service Commission to O. K. boosts ranging from 8% to 24%, averaging about 15%. Householders and small commercial users aren't affected.

KAISER-FRAZER WANTS $38-million damages from Otis & Co., Cleveland investment firm. K.-F. filed suit this week in U. S. District Court, Detroit. It's the latest move in the battle over Otis' withdrawal last February as underwriter of K.-F. stock (BW—Feb.21'48,p85).

SHIPMENTS OF FINISHED STEEL for the first seven months this year hit 37,486,000, topping a year ago by 1,300,000 tons.

PARTNERS—(left to right) George Ramskill, Clarence Becker, and John Sutherland have made a lucrative business out of . . .

Beating Life's Little Annoyances

Small Kansas company figures out preparation to prevent glass from fogging, has greaseless hair dressing ready for market.

As everybody knows, civilization has brought with it many annoyances. Some of the major ones have been overcome—for example, every radio comes equipped complete with a switch to turn it off. But it's the little things in life that really count, and no one has done much about life's minor annoyances.

So the eyeglasses that make you see better fog up at inconvenient times; the hair tonic that makes you look well groomed messes up your hatband.

• **Success**—A successful attempt to overcome some of these little pains has put three men into a lucrative business. Two of the men are chemical engineers—Clarence Becker and John Sutherland. The third is a boyhood chum and a banker, George E. Ramskill; a more-or-less silent partner, he is business manager of the firm.

Two years ago, in the small Kansas town of Burlingame, about 80 miles west of Kansas City, the trio formed Sutherland-Becker Laboratory Products Co.

The group's products are, necessarily, the only ones in the field. It's just that if the men see a need that isn't generally filled, they figure there's a market for a new product to do the job.

The first big project of the team was to develop a solution that would prevent glass from fogging. The idea came from the wife of one of the partners, who wanted something that would keep her windows clear. The result: Anti-Fog 41, more commonly known as AF-41. (The "41" comes from the fact that the partners made 40 unsuccessful tries, hit on the 41st.)

• **Varied Customers**—In 1947, first full year of operation, the company sold about 130,000 tubes of the stuff (at 49¢ retail). They expect to double that sales figure this year. Customers include the Kansas State Highway Commission, which uses it on windshields of its cars and trucks; meat-packing plants, who give it to inspectors who wear glasses; housewives, who spread it on windows—especially in the laundry room.

One of their most enthusiastic supporters is a prominent Topeka (Kan.) obstetrician, who wears glasses; he keeps a tube of anti-fog in the delivery room.

• **Marketing**—The company markets this product through wholesalers of drug, optical, and paper supplies. Thus far, they are covering only the Middle West, with the product on sale in service stations, drug and grocery stores, locker plants, optical shops, hardware stores.

Sutherland-Becker has a new package ready to boost sales. This will be a lipstick-like form of anti-fog which can be carried in purse or pocket for use anywhere, in any kind of weather.

• **Hair Dressing**—The success of its first product has given the two engineers both financial status and inspiration to go into new fields. Their second product is a hair dressing which is oil-less and soluble in water. They hope it will do away with such nuisances as spoiling hatbands, soiling sofas and pillows.

It has no mineral or vegetable oil, allows anyone who uses it to wash his

HOW TO GET THE LOW-DOWN on Upstate New York

If you need facts and figures on upstate New York business, call on the Marine Midland Trust Company of New York. The officers of the affiliated Marine Midland Banks in 47 New York State business centers have accurate, on-the-spot knowledge of the local business conditions. Their day-in, day-out business and social contacts can be profitable to you in many ways. We'll be glad to put you in touch with them!

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Lackawanna
Lockport
Malone
Medina
Middleport
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Nyack
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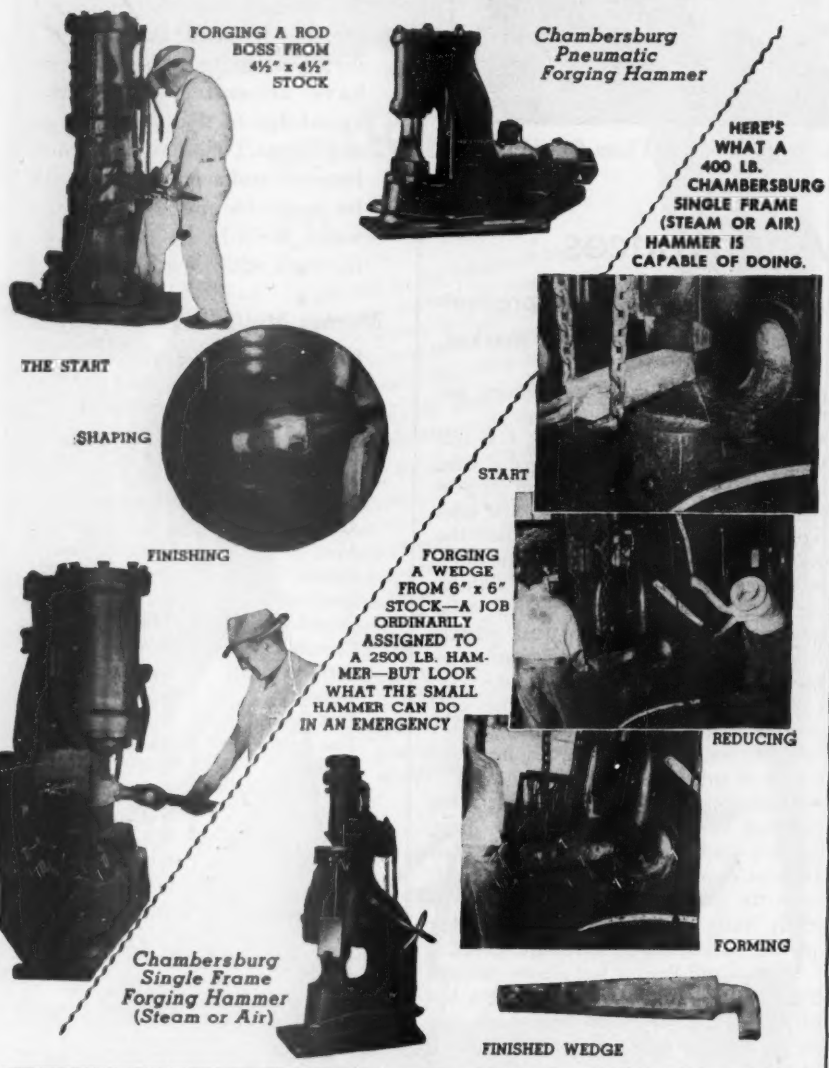
IT WILL SAVE YOU TIME AND MONEY—QUICKLY PAY FOR ITSELF

A small or moderate size hammer is a great convenience for any shop where machinery repair or maintenance work is carried on. You can save time and money and often make a better repair part than you can buy, or make by casting or welding. When you need a replacement part in a hurry, that's where a Chambersburg Hammer will pay for itself. If you have steam or air available, a Single Frame Hammer will be your logical choice; if not, the Pneumatic Hammer with hammer compressor and motor in the one piece of equipment is your best bet.

HERE'S WHAT A 200 LB. CHAMBERSBURG PNEUMATIC HAMMER IS CAPABLE OF


FORGING A ROD BOSS FROM 4½" x 4½" STOCK
Chambersburg Pneumatic Forging Hammer
HERE'S WHAT A 400 LB. CHAMBERSBURG SINGLE FRAME (STEAM OR AIR) HAMMER IS CAPABLE OF DOING.
THE START
SHAPING
FINISHING
START
FORGING A WEDGE FROM 6" x 6" STOCK—A JOB ORDINARILY ASSIGNED TO A 2500 LB. HAMMER—BUT LOOK WHAT THE SMALL HAMMER CAN DO IN AN EMERGENCY
REDUCING
FORMING
Chambersburg Single Frame Forging Hammer (Steam or Air)
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Position.....
Firm.....
Address.....
City.....State.....

hair easily. It's now available in sample form, will come on the market as soon as plans can be made for the company to bottle it with its present facilities.

• **Source of Ideas**—Ideas for the laboratory come right out of life—and out of the past experience of the partners and their friends. They are guided by the needs of the average person in everyday life. From these, they expect to have innumerable suggestions for new and better chemical products.

The company's latest venture is to find a way to dissolve bugs which get squashed on automobiles and are notably hard to remove. Its method is to dissect the bugs, see what makes them stick—chemically. Then it dopes out a preparation which dissolves the bug ingredients. This product is nearly completed, but Sutherland-Becker probably won't put it on the market for several months—until they get the bugs out of it.

Textron Will Close Its Nashua Mills

The southward shift of the textile industry has caught up with one more New England town—Nashua, N. H. Nashua has felt the approach of this misfortune before—but has always managed to stave it off. This time it seems to be final.

Textron, Inc., announced this week that it will close its two Nashua mills at the end of the year. That means that some 3,500 Nashuans—about 20% of the town's workers—will be out of jobs.

• **Background**—Textron bought Nashua Mfg. Co. in 1945. Last year it decided that the mills were outmoded, inefficient, and costly, and would have to be closed. The Chamber of Commerce and the C.I.O. Textile Workers Union's local persuaded the company to change its mind. Instead of closing down, Textron agreed to concentrate all of its Nashua operations in two of its six mills (BW—Aug.23'47,p16). Through this action, it expected to achieve enough economies to permit these two mills to stay open.

These economies have not been realized, according to Royal Little, Textron president. By the end of the year, he said, all of the company's Nashua production will be transferred to its various southern and Puerto Rican mills.

• **New Industry?**—Even before this decision, the Chamber of Commerce had been campaigning for new enterprises for the city. Textron cooperated; it made a determined effort to dispose of its surplus plants to new industries (BW—Dec.6'47,p21).

The campaign has met with little success so far. But the C. of C. plans to redouble its efforts. And Textron will undoubtedly continue to help.

Ever hear about 'Sephus Simpkins and the BRASS CANNON?

SEEMS the village elders gave 'Sephus a small but regular piece of change for keeping a high polish on the old Brass cannon in front of the Grange Hall. Then 'Sephus got to brooding. He struck for more money . . . or, by crikey, he'd buy another cannon *and go into the polishing business for himself.*

You can wind up just about that hopeless and confused, if you try to get anywhere doing business in many precincts of self-inflated industry today. Which prompts this blunt but not brazen suggestion: If it's Brass you need . . . with some common sense and fast service to go along with it, without red tape and fuddy formality . . . then we're the folks for you.

Nearly a hundred years of producing Brass sheet, rod, wire, and extruded shapes to inflexible specifications have given us all the Brass know-how you could possibly need to see you through any new-product problem quickly, easily, economically . . . and, in the long run, *profitably.* You will find, like scores of other fabricators, that *it pays to bring your Brass business to Bristol.* Write.

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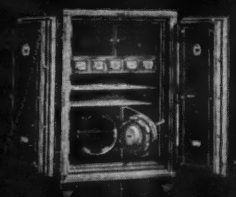
BRISTOL BRASS
CORPORATION

Makers of Brass since 1850, Bristol, Conn.

15 Park Row, New York City
418 Frick Building, Pittsburgh, Pennsylvania
1607 South Broadway, Dayton, Ohio
616 Temple Building, Rochester, New York
827 Hospital Trust Bldg., Providence, Rhode Island

The Brass Monkey Melted...

but my papers stayed cool and I stayed calm... and collected!

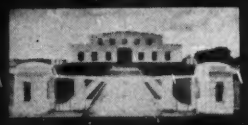


"That little melted monkey opened *my* eyes. How fast an office fire can start and how *hot* it can get!

"It made me realize the importance of my records and my safe. Imagine what it would be like to try and do business without accounts receivable, tax records, deeds and contracts . . . and inventory records, needed to collect fire insurance. Think it over—what would *you* do?

"Thank heavens, I traded in my old, obsolete heavy walled model for a modern Mosler "A" label safe . . . it kept me in business!"

4 out of 10 firms never reopen after losing their records by fire. That's why you can't *afford* any less than the best safe you can buy. For years, the world's finest safes and vaults have been Mosler. Ask your own banker.



Mosler is the builder of the famous U. S. gold storage vault doors at Fort Knox, Ky.

There's a Mosler safe to suit your needs exactly—and every Mosler safe is *dependable*. All carry the label of the Underwriters' Laboratories, Inc. Yet they cost less than you'd expect.

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Largest Builders of Safes and Vaults in the World

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Please send me: ☐ The new free booklet "What You Should Know About Safes."

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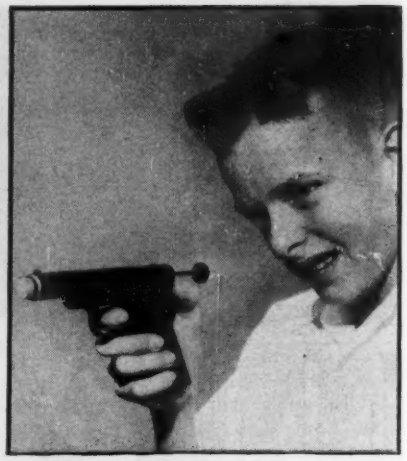


Right on the Target

America's small fry buys more pistols (toy, of course) than all the cops, robbers, and armed forces put together. The cork-shooting plastic pistol above is typical of recent trends in design, use of plastics, and increased firepower. Kelmar Corp., 2169 S. First St., Milwaukee, makes the "Pow'r Pop" on the assembly line. Speedier production methods have brought the retail price down from $1.69 to 49¢. Production currently is 10,000 a day—not enough to meet demand. Kelmar thinks that in addition to the right product, a reasonable price is a big lure in the toy market today.

Worsted Mills Face First Postwar Crisis

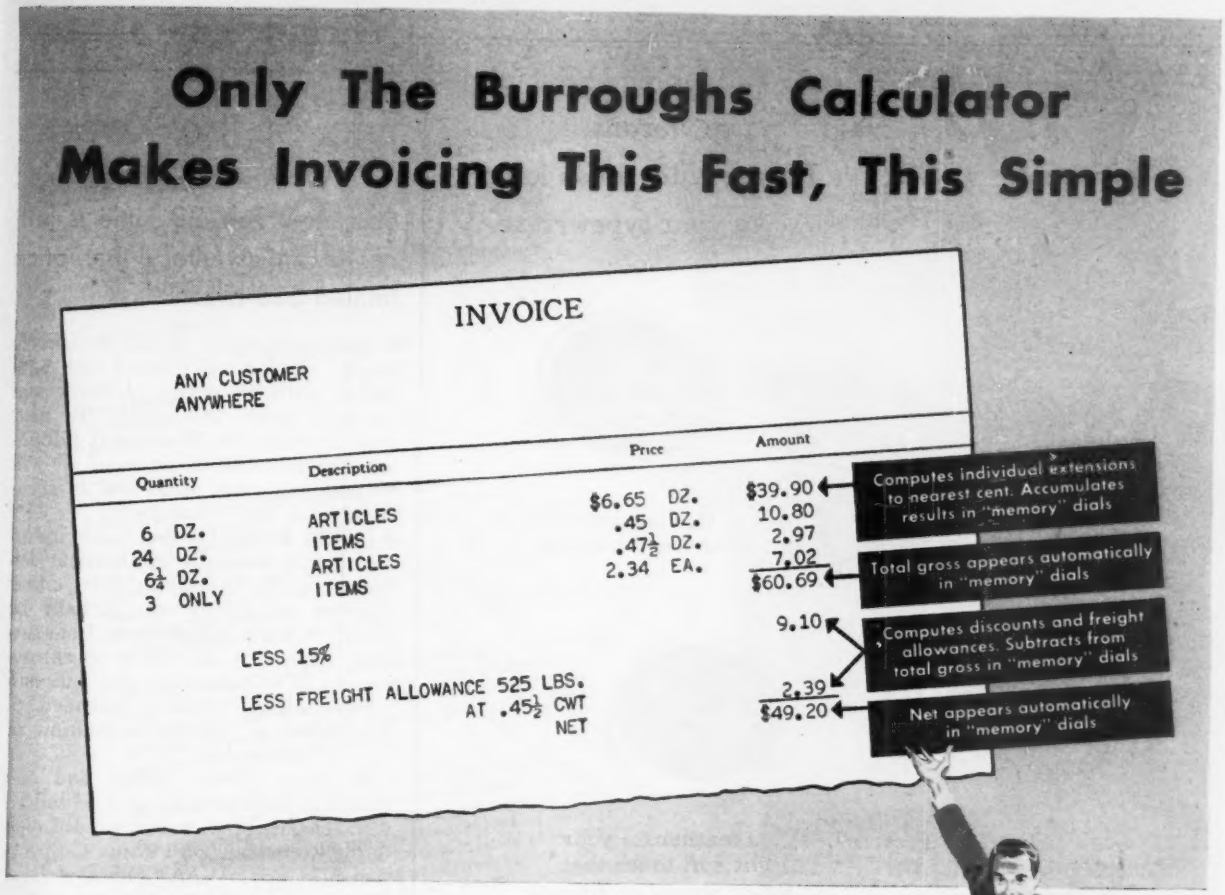
Men's worsted mills last week stood face to face with their first postwar crisis. Normally, goods are made up for fall sale at the tag end of the summer season. But this year business has slowed down to a walk.

• **First Real Drop**—This is the first actual faltering of a business which has been kept at high pressure since before the war. There has been talk that rising prices would tend to limit consumer sales of men's suits. But over-all personal income stayed high, men kept on buying, and mills kept on producing. Now the pipelines are nearly filled up—maybe overflowing.

If cutters come back into the market between now and the end of September to contract for spring fabrics, mills look for at least fair activity for the rest of the year. If they don't, you can put down the spring worsted-manufacturing season as a lost cause. That will mean a real let-down in mill activity—the first since before the war.

• **Safe Side**—Already some southern New England mills have cut hours—just to be safe. Most of this curtailment has been unimportant. Nevertheless, the hungry rush for suits is definitely over.

Only The Burroughs Calculator Makes Invoicing This Fast, This Simple


INVOICE
ANY CUSTOMER
ANYWHERE
Quantity
Description
Price
Amount
6 DZ. ARTICLES $6.65 DZ. $39.90
24 DZ. ITEMS .45 DZ. 10.80
6¼ DZ. ARTICLES .47½ DZ. 2.97
3 ONLY ITEMS 2.34 EA. 7.02
$60.69
Computes individual extensions to nearest cent. Accumulates results in "memory" dials
Total gross appears automatically in "memory" dials
9.10
LESS 15%
Computes discounts and freight allowances. Subtracts from total gross in "memory" dials
LESS FREIGHT ALLOWANCE 525 LBS. AT .45½ CWT
2.39
NET $49.20
Net appears automatically in "memory" dials

It's The Calculator that ***REMEMBERS*** *what other calculators forget*

No rehandling of figures! No re-entering of individual answers! No waste time and motion with the only calculator that takes you straight to the answer in one continuous, uninterrupted operation!

That's what the calculator that remembers offers you. It stores and accumulates the totals in exclusive "memory" dials to give grand totals or net results automatically. Find out about it today! Burroughs Adding Machine Company, Detroit 32, Michigan.

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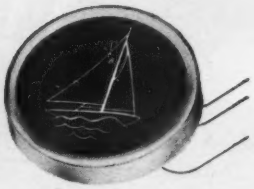
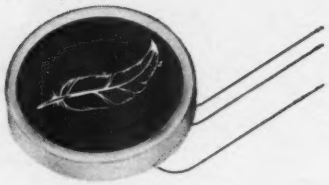
Please add these keys
to your typewriter...



...this because work is such smooth sailing.

...a jack-rabbit to suggest your speed, or should I say a whippet ?



...a feather for your light, soft touch that never shocks my fingers.

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THE Smith-Corona is the "Typewriter of the Experts." Professional typists who make their living with a typewriter, select Smith-Corona . . . because its *easy action*, *floating shift* and *automatic margin-set* speed up output, lessen fatigue . . . because its *mechanical precision* turns out cleaner, neater work . . . because its *durability* and *dependability* mean less frequent servicing, lower upkeep cost.

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Canadian factory and offices, Toronto, Ontario.
Makers of famous Smith-Corona Portable Typewriters, Adding Machines, Vivid Duplicators, Ribbons and Carbons

SURPLUS

End of the Road

WAA will go out of existence next Feb. 28. Little is left, out of an inventory that once totaled $28-billion.

The war-surplus barrel is nearly empty. Once it was jammed with $28-billion worth of plants, producer and consumer goods, and aircraft. By next Feb. 28, when the War Assets Administration goes out of business, all will be gone but a few plants and an accumulation of hard-to-sell goods.

• **Unsold Plants**—Of the 1,210 industrial plants, originally worth about $9-billion, nearly 1,000 have been either disposed of—wholly or partially—or leased. A few were withdrawn from surplus. Only 231 remain in inventory; about 150 of these carry the national-security clause, which is intended to keep them in "standby" condition in case of another war.

So these unsold plants, and the rented properties, make up a $4-billion white elephant that will be handed over to the Reconstruction Finance Corporation next year. WAA's Office of Real Property Disposal has available a catalog of plants and property up for sale.

• **Personal Property**—Only about $410-million worth (acquisition cost) of personal property—machinery, hardware, raw materials, and airplane parts—remains in the bin that once held about $19-billion worth.

To speed up disposal of the remaining personal property, WAA has dropped most of the priorities and preferences it used to give, by law, to federal agencies, veterans, state and local governments and their instrumentalities, and nonprofit health and education institutions (BW—Sep.11'48,p28).

Personal property was formerly sold on a fixed-price or negotiated-bid basis; now it is being done by competitive bidding.

• **Where to Set It**—Sale of surplus is controlled by 10 regional offices. The offices, and the amount of surplus available, are: New York, $120-million; Cincinnati, $76-million; Chicago, $71-million; Philadelphia, $69-million; Kansas City, $20-million; San Francisco, $17-million; Atlanta, $14-million; Grand Prairie, Tex., $12-million; Seattle, $7-million; and Denver, $3.5-million.

The list of commodities is broken down into 11 major classes, 66 groups. Here is the list, showing total dollar amount available for each. All are available from all 10 regional offices, except

1 Fruehauf replaces 3 Trucks!

STRAUSS STORES
AUTO & RADIO ACCESSORIES - TIRES & TUBES
MASPETH, N.Y.
February 25, 1948
The Fruehauf Trailer Co.
Detroit,
Michigan
Gentlemen:
The Fruehauf Trailer replaced three trucks in covering the same territory. By purchasing the Fruehauf we bought a warehouse on wheels that irons out our buying and shipping problems in servicing our chain of Strauss Stores radio and auto accessory retail outlets and agencies in New York and the New England States. In planning our national expansion in our retail and agency outlet set-up we are counting on Fruehauf Trailers.
We often pick up hard to get merchandise at manufacturing points and ship direct to our retail locations. The prestige and advertising value of the attention-getting, shining Fruehauf, bearing the Strauss Store name is of incalculable value.
By using the Fruehauf we found that merchandise damaged in transit has been cut to a minimum because the roominess of the trailer has eliminated the jamming of merchandise. A systematized layout of merchandise for drop shipments is possible so that merchandise need only be handled when loading and unloading and time and energy is not wasted by unnecessary shifting of merchandise.
Sincerely,
Leonard S.
Vice Pre
LSS/rr
THE Old METHOD
REGAL TIRES
THE Modern METHOD
Stores

STRAUSS STORES' operation is a good example of the delivery short-cut Fruehauf Trailers are making for all types of business.

One Trailer-and-truck combination does the work of three small trucks with only a slight increase in the fuel cost for one. Two power units are eliminated, as well as the cost of their operation and maintenance. Now, one "detachable body" of non-corrosive Stainless Steel—which never needs painting—lowers maintenance figures to a fraction of the old method.

So successful has this modern Trailer operation proven that more Stainless Steel Fruehaufs are on order. Repeat orders — a large part of Fruehauf's business—say most convincingly, "We're satisfied."

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY

DETROIT 32 • LOS ANGELES 11

In Canada: Weston, Ontario

79 Factory Service Branches

Fruehauf Trailers

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Hear Harrison Wood, Interpreter of World Events, Every Sunday, 3:00 P.M., E.D.T., over ABC. Consult Your Local Paper!

"ENGINEERED TRANSPORTATION"

Jim's the "hustler" in our office

always in a hurry —Jim's "hustle" helped us cut costs and get work out faster. He came into my office one day with a requisition and a Clary Adding Machine salesman. "Bill," he said, "wait'll you see this demonstration. These machines do everything but think."

He was right, too. Even on my demonstration-scarred desk, the Clary looked good . . . faster, easier to use, entirely different in design.

Take time to see a Clary demonstrated. Remember, before you *buy*, be sure to *try* a Clary.

Factory-approved service in your city

Clary

adds·subtracts·multiplies·divides

Above—Clary Speed-o-lectric Model A-1M. Other Clary all-electric models start at **$179.50** *plus tax.*

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SALES OFFICES: Clary Factory Branch Offices or Dealers are located in all principal cities. If our representative is not listed in your phone book, write or wire for his address.

Please send me the latest information on Clary *Speed-o-lectric* Adding Machines.

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FIRM_____

ADDRESS_____

CITY_____ ZONE___ STATE____

SW 9-18

that those marked with an asterisk are not available at Denver. Figures are in millions of dollars.

Item	*Amount Available*
Automotive and General Machinery	
Machinery:	
Heavy construction	$3.7
Light construction	4.3
Mining	0.5
*Farm	0.5
Parts for machinery	6.9
Motor trucks	3.1
Passenger vehicles	0.9
Tires and tubes	0.3
Auto replacement parts	5.8
Auto accessories and assemblies	2.6
Auto maintenance equipment	1.0
Hardware, Plumbing, General Products	
Mill supplies, heavy hardware	1.5
General hardware	10.3
Hand tools	3.7
Housewares	0.2
Farm eqt. and supplies	1.5
Plumbing and heating eqt.	1.9
Air conditioning and refrigeration eqt.	1.3
Electrical eqt.	8.3
Photographic and optical eqt.	3.0
Containers	2.6
Safety eqt.	5.2
Recreational eqt.	7.7
Miscellaneous products	1.8
Paper, Furniture, Office Equipment	
Office furniture (industrial)	2.8
Household furniture (misc.)	1.8
Accounting machinery	1.2
Reproducing machinery	1.5
*Fine paper	0.2
Coarse paper	3.5
Converted paper products	0.4
Office supplies	0.1
Engineering supplies	1.0
Drugs and Medical Equipment	
Drugs, medicines, etc.	5.0
Surgical and professional eqt.	3.1
Hospital laboratory eqt.	4.5
Textiles, Apparel, and Footwear	
Textile fabrics	2.5
Textile products	5.1
*Footwear	0.9
Clothing and apparel	7.4
Industrial Machinery and Equipment	
Electrical eqt.	35.6
Steam eqt.	8.5
Internal-combustion engines	21.4
Metal-processing eqt.	11.1
Materials handling eqt.	18.9
Special industrial eqt.	8.1
Chemical and miscellaneous eqt.	6.7
Metal heat-treating furnaces	14.3
*Metal-heating furnaces, etc.	4.0
Materials and Supplies	
Chemicals	2.4
Construction materials	3.3
Fuels, lubricants	0.9
Leather, fibers, misc.	0.5
Paints, varnish, lacquer	1.0
Service and miscellaneous eqt.	4.1
Metalworking Equipment	
Abrasives	2.1
*Bearings	2.7
Cutting tools	9.1
Machine tools	64.9
Metal-forming and cutting eqt.	12.0
*Metal-cutting and testing eqt.	5.7
Metals	
Iron and steel	14.8
Nonferrous metals	8.4
Valves and fittings	2.4
Electronics	
Electronics	9.8
Aircraft	
Aircraft parts and components	22.6

CITIES

Ferryboat Operator Gives In

Puget Sound operator, who battled state to a standstill on rate increase, yields to stockholders' wishes, decides to sell line for $5,975,000 to Washington State Toll Bridge Authority.

Capt. Alex M. Peabody of Seattle is a staunch opponent of public ownership or operation of any enterprise anywhere. As operator of the Black Ball Line of commuter ferries across Puget Sound, he has been fighting a long battle with the state of Washington. Now it looks as though the battle's over.

• **Selling Out**—Peabody is president of Puget Sound Navigation Co.—he's a son of the founder, descendant of seafaring men in the days of clipper ships. Last month, as the result of a growing volume of complaints over rates and service, the Washington State Toll Bridge Authority stepped up with an offer to buy the company. Last week, along with the company's stockholders, Peabody voted to accept the offer. The price: $5,975,000 in 90 days.

The sale would place under state ownership and operation a passenger and automobile ferry system that Seattle people say is the largest in the country.

• **Big Link**—Peabody's fleet links the heavily populated east shore of Puget Sound to the Olympic Peninsula, connecting dozens of ports and islands. The big run is between Seattle and Bremerton, site of the Puget Sound Navy Yard.

During the war the tremendous expansion of the Navy yard built a record ferry traffic, and Peabody voluntarily cut rates 30% below levels set in 1937. Even so, from 1942 to 1946 the company paid federal income taxes totaling $8-million.

• **Traffic Drop**—But sharp cutbacks at the Navy yard knocked ferry traffic off sharply. Passenger volume in 1947 was down to half the 10.3-million peak established in 1945. This year traffic has continued to drop off.

While traffic fell, costs of oil and wages rose and the work week shortened. Peabody first wiped out the 30% wartime cut, restoring fares to 1937 levels. Then he said he had to have 30% more. The state allowed this on a temporary basis, but early this year ruled that only 10% could be added, not the 30% Peabody had asked for.

• **Boycott**—Rather than operate at a loss, Peabody tied up all his ferries except at the international run at Victoria, B. C., which was beyond state control (BW—Mar.20'48,p57). Voluntarily Peabody gave up his state charter.

Ten days later the system returned to operation on a new basis—a charter and lease arrangement with the various counties in which the ferries ran. This arrangement placed the system entirely outside the state's control. At the same time, Peabody put into effect a new rate schedule averaging 69% above 1937.

OPPONENT of public ownership, Capt. Alex M. Peabody, finally sells ferries to state

Commuters balked at this rate boost, organized the Puget Sound Ferry Users Assn. Its object: lower rates and an end to the Peabody monopoly.

"We want a new man to row the boat," said its chairman, Karl Kaye, president of Pacific Wire Works Co., Seattle. He claimed that high rates were cutting travel and driving the system out of business.

• **State Action**—Gov. Mon C. Wallgren, with whom Peabody had been at swords' points for months, ordered studies looking to state construction and operation of ferries. High costs knocked that out. Then the Toll Bridge Authority, which Wallgren heads, called in A. C. Allyn & Co., Chicago investment house. The authority asked the firm to prepare studies for issuance of revenue bonds to purchase the Peabody system.

Under that plan, a bond issue of probably $8.5-million would be issued to buy 21 vessels, docks and facilities, and to pay for repairs and maintenance. Tied with this would be a bond issue for

The check that paid your last water bill is probably filed away. What was the amount of that check . . . and numerous checks like it that paid many other water bills in past years?

Check Up on "Water Checks"

It may "jolt" you to find that your company might have saved most of the money it has paid out for water.

"Subterranean Savings"

Right under your plant may be an excellent source of water. Then what you need is a Deming Deep Well Turbine Pump to lift that water into your plant and discharge it into your present piping system.

Collect Your Own Water Bills

Many owners of Deming Deep Well Turbine Pumps are saving up to 60% on water costs compared with their former city water bills. It costs nothing to investigate YOUR company's potential savings. Say the word and we will ask a Deming Distributor to discuss all details.

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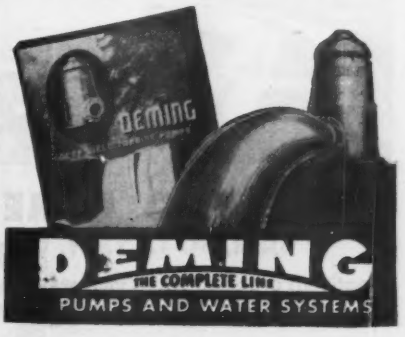
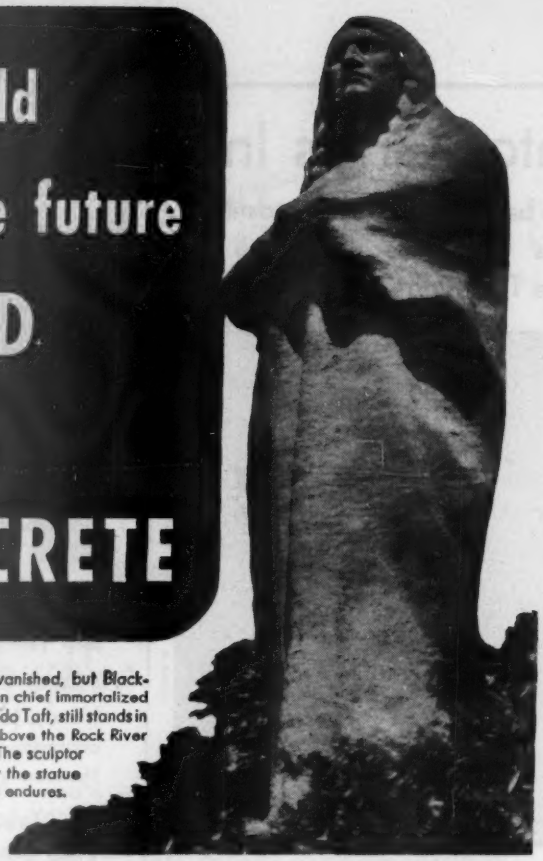


To build for the future BUILD with CONCRETE



His people have vanished, but Blackhawk, famous Indian chief immortalized in concrete by Lorado Taft, still stands in stately grandeur above the Rock River near Oregon, Ill. The sculptor chose concrete for the statue in 1910 because it endures.

PORTLAND cement concrete is the enduring construction material—whether the building project is a pavement, a school, a firesafe home, a farm building or a drainage system.

Concrete pavement not only lasts longer and costs far less to maintain, but usually costs less to build than other pavements of equal load-carrying capacity. It gives motorists the best investment for their gas and vehicle taxes, which pay for paving.

All over America concrete is helping farmers keep livestock healthy, save feed and labor and increase food supplies.

Concrete's long life, low maintenance expense, resistance to deterioration and fire—all make it the preferred structural material, from a small house to a great hospital.

So whatever you build, you'll be money ahead in the long run to choose firesafe, long-lasting, ***low-annual-cost*** concrete.

PORTLAND CEMENT ASSOCIATION

Dept. 9C-12, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

$1.5-million to build a bridge to Bainbridge Island, lying between Seattle and Bremerton.

• **Trip Shortener**—This bridge would shorten the water trip and funnel traffic to permit consolidation of seven ferry runs into three or four. For years, Peabody has wanted the bridge built. When the state took no action, Peabody last year made engineering surveys and announced that he was prepared to build the bridge himself as the only long-term solution to lower ferry rates. The state refused him permission, but did nothing itself.

To ferry users, Wallgren (a candidate for reelection) held out the promise of immediate rate reductions of "hundreds of thousands of dollars a year" through state ownership.

• **Peabody Yields**—For two hours last week, 60 stockholders of Puget Sound Navigation Co. talked the issue out. Peabody wanted to go on fighting. But many of the stockholders looked upon their holdings as an investment, not a cause. Though Peabody held enough stock to block the sale, he yielded to the wishes of his stockholders.

Meantime, a legislative subcommittee ordered hearings to seek fuller information about the purchase. Individual members expressed the view that when the legislative body convenes in January, a curb will be sought on the power of the Toll Bridge Authority to buy new properties.

How Beer Is Made

Milwaukee brewers displayed this miniature brewery to Wisconsin's recent Centennial celebration in their city. It does just about everything but hand out free beer. Miniature bags of grain arrive at the lower right, and subsequent steps show the malting, cooking, and separating processes—right down to filling the beer barrels.

What Does Chicago's Most IMPORTANT Million Think Of Your Product ?

It's the little question with the big significance. Because . . .

Three hundred and seven nights each year this million-fold group is buying—buying—buying! The stores may be closed—but the folks are *buying* nonetheless!

These buyers are the reader-friends of the Chicago Daily News and, in the comfort and leisure of their HOMES, they are *shopping* the advertising columns of their favorite newspaper. For 72 years they have been doing that, though, of course, there weren't so many of them in the earlier days.

But they count up to a million now. More than a million actually. And the *spendable dollars,* which are theirs to satisfy their *countless desires,* will total into the millions—and millions—and millions!

Sales-minded executives seeking *maximum* results in the Chicago market always keep asking themselves: *what does Chicago's most IMPORTANT million think of MY product?*

Every year a tremendous *sales-volume* depends on how this one single question is answered!

CHICAGO DAILY NEWS

For 72 Years Chicago's HOME Newspaper

JOHN S. KNIGHT, *Publisher*

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NEW YORK: 9 Rockefeller Plaza
LOS ANGELES OFFICE: Story, Brooks & Finley, Inc. 624 Guaranty Building

DETROIT OFFICE: Free Press Building
MIAMI: HERALD BUILDING, Miami, Florida

Did you ever sell SCRAP at a profit?

Your scrap pile holds more than metal. Its costly contents include your dead losses in time and labor operations. Seconds and rejects can only mean increased production costs all along the line.

There is an answer to this . . . Inspection by Dial Indicator Gaging . . . Stop making the parts that won't fit!

Wherever you have a production problem involving a dimension of any kind, you have a use for a Dial Indicator Gage. And a Dial Indicator Gage for that specific job is available . . . This is the *modern* inspection method that enables workers to *see* dimensions, instead of feeling for them. You get *accuracy*—to whatever degree your work requires. Equally important—you get *speed*.

Old-fashioned gaging methods permit too much scrap loss

Dial Indicator Gaging cuts seconds and rejects to a minimum

For example — as pictured below — a Dial Indicator permits gaging while grinding, makes possible continuous precision measurement without stopping the machine. This prevents out-of-round, oversize and undersize pieces—reduces inspection time—saves the time formerly needed for resetting sizing controls after wheel dressing. The Arnold Gage, with various accessories, accurately gages outside diameter, inside or outside widths between faces of shoulders, tapered diameters, and work having splines and keyways. For full details, please write for illustrated Bulletin No. 70.

We make both regular and custom-built gages to meet the needs of users in a hundred industries. For highly specialized needs, we also make Air Gages and Automatic Electronic Sorting Gages. Let us help you with any gaging or inspection problem. If you will send us blueprints of work to be measured, we will gladly recommend the proper gage. Your inquiry involves no obligation.

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FEDERAL PRODUCTS CORP.
1144 Eddy St., Providence 1, R. I.

YOUR PROFIT DECISION IS *Visible** PRECISION

*The use of Dial Indicator Gages—visible precision—lowers inspection costs, raises production. Federal Products Corporation is America's largest maker of both regular and custom-built gages—mechanical, air, electronic—for the measurement of single and multiple dimensions.

C.G.&E. Wins $10-Million In Electric Rate War

The Cincinnati Gas & Electric Co. was settling comfortably into a much improved revenue position this week. The reason was a $10-million rate order handed down by the Ohio Public Utilities Commission.

The order—which may be appealed to the Ohio Courts by the city—does two things. It:

(1) Finally junks a rate cut, imposed by the city in 1944 and in dispute ever since; and

(2) Gives C. G. & E. a new rate increase of $2.5-million yearly on its business within the city.

• **Background**—When the city passed the rate-cut ordinance, C. G. & E. appealed the ruling to PUC, and continued to charge its former rate. From 1944 to 1946 it impounded the difference in case the decision went against it. The amount impounded—a little less than $5-million—has been restored to the company by the PUC order.

From 1946 on, C. G. & E. didn't impound the extra collections. Instead it put up a bond and reserved the funds from income to cover the extra collections. PUC's order freed it from this contingent liability, amounting to $2.7-million. That sum, plus the impounded funds and the new rate increase brought the company's total gain to just about $10-million gross.

• **Maybe More**—The PUC rate boost applies only to Cincinnati. Now C. G. & E.'s will try to negotiate what rate boosts it can in the other towns and cities it serves. So C. G. & E.'s final gross take may go even higher.

BUFFALO BOOM ROLLS ON

Industry is increasing its stake in the Buffalo area. You can see that by the figures on new construction, added up last week by the city's Chamber of Commerce: Since the beginning of the year, 48 new building projects of all kinds, worth some $30-million, have been announced.

The growing diversity of Buffalo's industry (BW—Feb.7'48,p74) shows up clearly in these plans. They include steel, food processing, and printing plants. Also on the way are new apartment houses, grocery stores, and trucking establishments.

All told, more than $232-million has already been invested or earmarked for new commercial construction, expansion, and modernization in the area since V-J Day. Ninety-three factory projects account for about $116-million of the total.

In that time, new industries have provided jobs for some 20,000 workers.

The *Amazing* NEW Bell & Howell FILMO MICROFILM RECORDER

with automatic feed

It's amazing! The new Bell & Howell Microfilm Recorder, with automatic feed, provides twice the production *at less than half the cost* of other microfilm recorders. Completely automatic, easy to use, and records more documents in less space than ANY other recorder—that's the Bell & Howell MICROFILM RECORDER!

Microfilm Recorder with automatic feeder in operation. Clerk is loading second feeder for continuous machine run.

4 OUTSTANDING ADVANTAGES!

1. The Automatic Feed allows *one operator to do the work of two!* Practically eliminates idle-machine time. Up to 250 check size documents per minute may be recorded.

2. With idle-machine time virtually non-existent, fewer Filmo Recorders with Automatic Feed are required.

3. Film *cost is halved* in one-side recording, and *twice as many documents* are recorded on the same size roll of film! Using the same method that 8mm cameras have used for years, the Filmo Recorder takes pictures up one side of the film and down the other. Saves on cost of film and processing.

4. *Added flexibility!* Three optional reduction ratios available for specific needs allow a choice in reduction size of 18-1 (one-side only), 30-1, 37-1. *And,* both sides of any document may be recorded simultaneously, side by side. Controls are simple—change from one-side operation to two-side recording with the flick of a lever.

Bell & Howell Service Policy Means Continuous Economical Operation

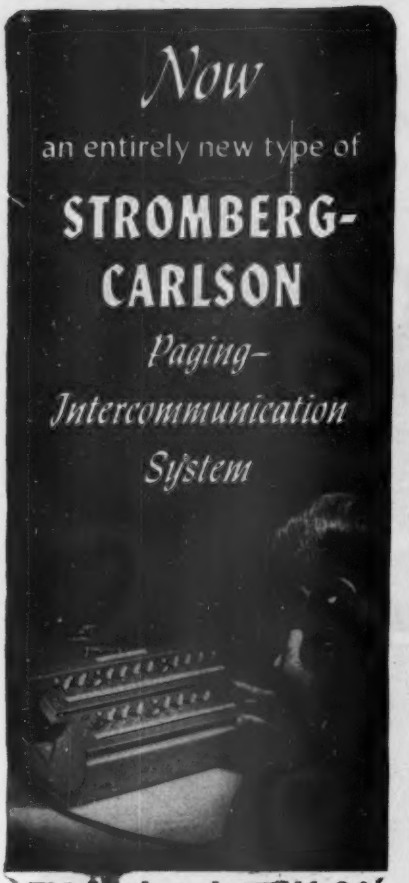
You buy the Filmo Recorder outright . . . no continuing rental charges. Fully interchangeable units make servicing fast, mean maximum use of Filmo Recorder.

Also available on outright purchase are the Filmo Reader and Filmo Automatic Daylight Processor. Write today for prices and illustrated literature. Bell & Howell Company, 7116 McCormick Road, Chicago 45.

Precision-Made by

Bell & Howell

Since 1907 the Largest Manufacturer of Professional Motion Picture Equipment for Hollywood and the World



Think what these IM-20 Features will mean to you

A versatile, efficient intercommunicating and paging system for schools, small plants, departmental paging or production control in any plant. A necessity for large warehouses and garages.

Hospitals use it to save time and steps of floor nurse. Speakers in patients' rooms enable nurse to receive calls and converse with patient without leaving desk.

For indoor or outdoor use.

As many speakers for as many areas as you need . . . added in units of 12.

Each speaker serves as hi-sensitivity microphone. Person called can answer from anywhere in speaker service area.

Telephone type handset for privacy at the control end. Microphone and speaker can be used when privacy is not required.

Anyone can call in from any speaker area by pressing call button. Signal light on control board notifies operator.

Speakers individually adjusted at installation for volume to override area noise levels.

Write for full information or call your Stromberg-Carlson distributor, whose name will be found in your classified telephone directory. Stromberg-Carlson Company, Sound Equipment Division, Department B-9, Rochester 3, New York.

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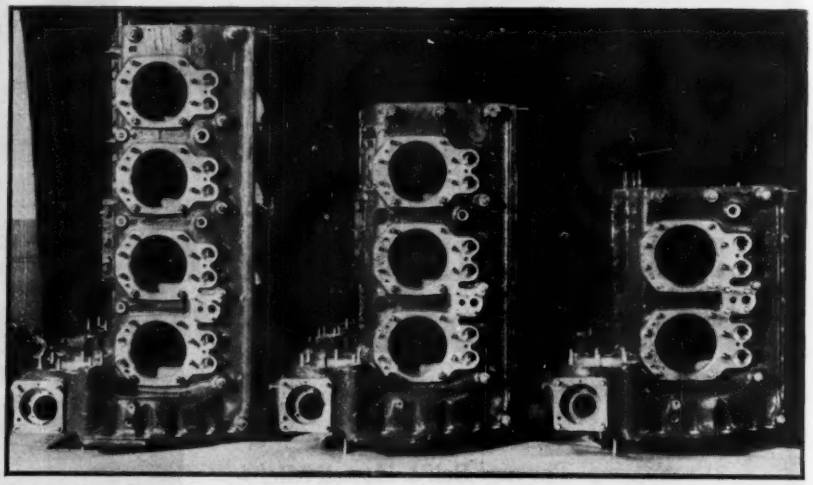
NATURAL VOICE SOUND SYSTEMS

AUTOMOTIVE



ENGINE BLOCKS for 8-, 6-, and 4-cylinder horizontally opposed engines differ only in length. (Opposed cylinders are on other side of blocks.) Their use results in . . .

CONTRAST IN ENGINE SPACE on Army trucks. The front truck has a conventional engine; the rear has a new Continental air-cooled job mounted vertically

New Engine Is Light, Compact

Continental Motors develops high-output, air-cooled gasoline engines for Army that can be made larger without major changes in design. So parts are interchangeable. Civilian uses seen.

One big problem in producing a versatile line of higher horsepower gasoline engines is that each different engine has to have pretty much its own design. Just the bare fact of a change in size has necessitated changes in valve design, connecting rods, bearings, fittings —practically all the workings.

• **An Answer**—Five years ago, Continental Motors Corp. got a development contract from the government to solve this problem. This week, Continental came up with its answer. It's a simple one:

(1) Take two basic engine blocks for two basic engine types—one with horizontally opposed cylinders of 4⅜-in. bore, and one with V-type cylinder placement, with 5¾-in. bore.

(2) For more horsepower, just lengthen the blocks to add more cylinders.

Thus, this new design gives a horse-

power range of from 125 to 1,040 hp.

If you use the smaller-bore blocks in 4-, 6-, and 8-cylinder combinations (top picture, page 46), you have a line from 125 to 250 hp. Use the larger-bore blocks in 6-, 8-, and 12-cylinder combinations, and you have another line of from 375 to 1,040 hp.

The only major differences in the various engines are in the blocks, crankshafts, and camshafts. All other parts are identical (except, of course, that a different series of connecting rods and bearings is used for each of the two types of blocks).

• **Air-Cooled**—These powerplants are air-cooled. That means an immediate simplification of design. You don't need a radiator, water pump, or many other parts that liquid-cooled engines require. And, of course, that means the air-cooled engine is much lighter than the liquid-cooled jobs. Continental's 250-hp., 8-cylinder engine, for example, weighs 777 lbs. Its liquid-cooled engine and required fittings with the same capacity weigh 2,400 lb.

The comparative weight ratios show up best in the higher horsepower ranges; but even in ranges below 250 hp., the ratios are as high as two to one.

• **Army Interested**—Army Ordnance is highly intrigued with the new development. It has pointed out that in World War II six medium-size tank engines were used. They needed 5,165 spare engine parts, six sets of maintenance literature, six sets of tools. The Continental medium-tank engine size fills the bill with 954 spare parts, one set of literature and tools.

What's sauce for the military gander may one day be sauce for the civilian goose. Adaptations of the new engines may turn up in trucks, buses, and farm implements. Manufacturers will like the standardization of parts as well as the Army does. And dealers will like the shrinkage in spare-parts inventories.

Another asset is the engine's compactness. Installed vertically, the 250-hp. engine takes up little more room in a truck than the radiator and fan alone take up in liquid-cooled engines (lower picture, page 46). The combination of small size and light weight would make it possible to increase bus and truck payloads a lot.

• **For the Future**—Continental knows that in the thinking about commercial use, it's looking a long way ahead. Civilian vehicle makers and other users are going to wait to see how well the military program goes before they buy the air-cooled engine heavily. And while the armed services are definitely interested, they have given Continental no mass-production contracts yet. How big military orders are—if and when—will determine how fast the company can tool up for commercial manufacture.

As to price, all Continental executives

This trade school depends on Janitrol heat exclusively . . . in class rooms, laboratories, recreation rooms and hospital.

Whether TRADE SCHOOL OR SERVICE STATION

Service Stations need heat quick and often to compensate for frequent door opening. Janitrol's meet tough heating requirements without frequent service or attention.

Janitrol GAS-FIRED
UNIT HEATERS
STAY ON THE JOB
DEPENDABLE HEAT YEAR AFTER YEAR

If you are building a new plant, making additions or leasing a vacant store, Janitrol Unit Heating can bring you many benefits and most likely save you money.

Automatic, clean Janitrol gas heating eliminates the need of a costly central heating plant with it's operating labor, and the storing and handling of fuel.

Each Janitrol Unit Heater is a complete self-contained automatic gas-fired heating plant . . . delivers clean heat . . . fast . . . when you want it . . . where you want it. There's no waste of fuel and money from overheating or the transfer of heat through long distributing systems.

With 35 years experience in the gas equipment field, Surface Combustion has engineered more worthwhile design and operating features into the complete Janitrol line. Janitrol sells by comparison and is only installed by experienced, capable heating contractors.

Ask your Janitrol Dealer for free heating survey. You'll find him listed in the classified section of your phone directory.

Janitrol A PRODUCT OF
SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

Multiply Your Manpower 13 Times

That's just what happens when you install powerful, new Whiting Electric Hoists in your plant. Each of these units handles loads up to two-tons, 13 times as fast as a hand hoist . . . releasing men and machines for productive work.

What's more, maintenance costs are kept to a minimum. Because of their simple, worm-gear design, Whiting Hoists have fewer parts to wear . . . fewer parts to maintain.

Your workers will like them, too. These new hoists make it a simple matter to lift and move back-breaking loads . . . anywhere in the plant.

You'll find it will pay you to learn how Whiting Hoists can save time and money in your plant. Send for the facts.

If It Saves One Man Only 12 Minutes a Day . . . IT PAYS A PROFIT!

WHITING ELECTRIC HOISTS

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Write for Bulletin H-100A

WHITING CORPORATION
15661 Lathrop Avenue, Harvey, Illinois

☐ Send me a copy of your Bulletin H-100A describing the new Whiting Electric Hoist.

☐ Please send me the name of the Whiting distributor in my territory who can give me immediate delivery on a Whiting Hoist.

NAME _____

STREET ADDRESS _____

CITY _____ STATE _____

will say, cautiously, is this: They hope to whittle it down somewhere competitive with the liquid-cooled engine. In that field, Continental is the largest independent producer today.

• **Transition**—If the new engines come up to scratch, Continental may be a big step ahead in its scramble to pull out of the thorny transitional period it went through after the war. Today, the company is pretty well stabilized—but there's no denying the going has been rough.

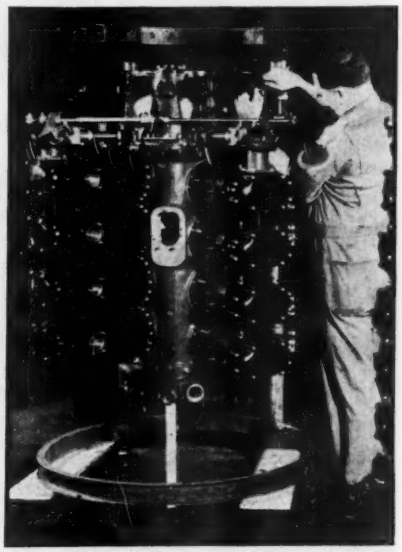
In business volume, the company has done better, dollarwise, than ever before in its peacetime history. Profits have been something else again. Last fiscal year Continental had an operating loss of $8.6-million. With federal tax rebates, the net loss still came to $1.7-million, after all charges had been deducted.

• **Decision**—Rather oddly, the volume of business is one reason for the rough going.

After the war, Continental had a choice: (1) to take on huge new business, work overtime to handle it; or (2) to turn down orders and let competition build back to prewar levels. (Before the war, the company did about 15% of total independent engine business; right after the war it was doing nearly 50%.)

Continental and its energetic president, C. J. Reese (cover), elected to take on the business. Digesting it was harder than had been expected. The overtime hours necessary to turn out the goods and keep customers happy ate right through profits.

• **Renovation and Reward**—At the same time, the company was clearing its decks for more efficient operation (BW—Jun.1 '46,p48). Whole sections of its plant were torn out and made over. New



V-TYPE 8-cylinder engine of Continental's new design gives 530 hp. With superchargers, it would have 685 hp.

lines of engines in the varied fields served by the company were developed and put into production. All the time the company had its eye on the goal of as much interchangeability of parts as possible.

In all, the company has spent more than $15-million for retooling and expansion since the end of the war.

About a year ago, the strenuous program began to pay off. For the current fiscal year's first nine months, ended July 31, 1948, net profit was $2,536,129.

• **Broad Line**—This income, from nine month's sales of $85-million, came from the broadest line of power packages an American company has ever tried. Continental makes civilian engines ranging from 1½ hp. to 247 hp.; air-cooled and liquid-cooled; powered by gasoline, diesel oil, butane, natural gas, and other fuels; for automotive vehicles, aircraft, boats, farm implements, and industrial equipment.

At Muskegon, Mich., manufacturing headquarters of the company, liquid-cooled engines are built for truck, bus, and farm implement applications. The plant makes aircraft engines, too; this end of the business has definitely fallen off as the market for personal planes has dropped.

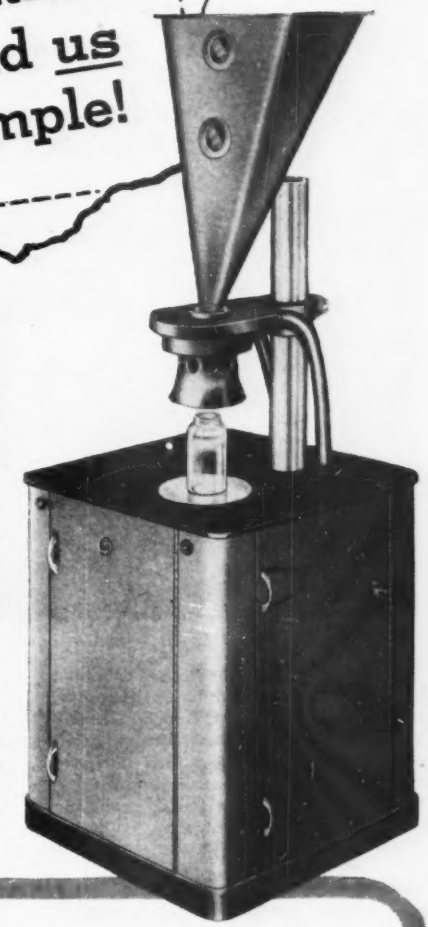
At Milwaukee, Wisconsin Motor Corp. (83% owned by Continental) builds air-cooled heavy-duty engines in 14 models from 2.5 to 31 hp. These are mainly for industrial use.

At Detroit, Continental has its ex-

Small-Town Mail Route

For towns with inadequate railroad service, the U. S. Post Office has to do its own hauling. This bus, on a regular daily run, serves 28 small stations between Washington, D. C., and Harrisonburg, Va. It's outfitted like a railway mail car inside, and carries postal clerks to sort mail en route.

This ad entitles you to send us a free sample!



That's right—if yours is a powdered product . . . and if you're interested in faster, more accurate packaging, send us samples of your product and the containers you use. We'll run a performance test with the General Mills Vacuflow Powder Filler. And we're sure the results of that test will be most interesting to you.

General Mills Vacuflow Powder Fillers use a new approach to the problem of packing freeflowing or non-freeflowing powders. An intermittent vacuum fills containers and at the same time controls weight and density, assuring split-ounce accuracy and unparalleled speed.

There are several Vacuflow models. At the right is Model D, designed for manual filling of small and medium size containers—ideal for manufacturers with low tonnage production on a wide variety of products. Other models are designed for multi-head high-speed output and bulk packing.

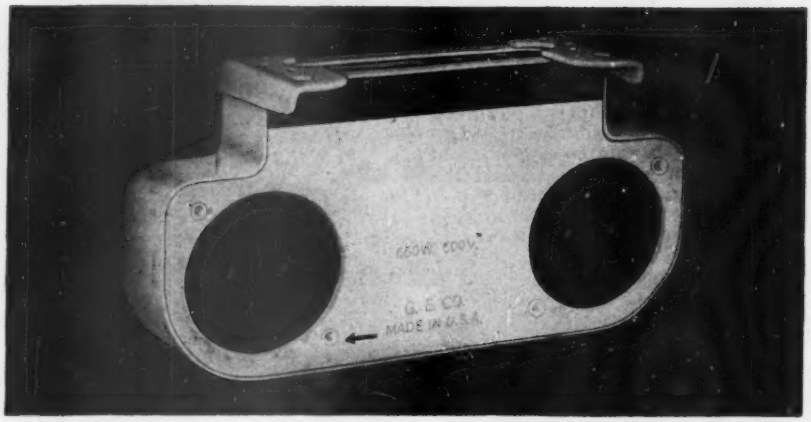
Here are a few of the products on which we've run tests in the past. All are now packed by Model D Vacuflow Powder Fillers.

Why not send us your samples today? Address Dept. B1081, General Mills, Inc., 1620 Central Ave., Minneapolis, Minn.

Mechanical Division
General Mills, Inc.
Minneapolis, Minn.

Made by one of the world's largest users of packaging machinery

Check THE FIXTURES YOU BUY FOR GE TURRET* LAMPHOLDERS



SAFETY FEATURE —The hazard of falling lamps is virtually eliminated when fixtures are equipped with General Electric Turret lampholders. Each spring-backed plate contains two holders into which the fluorescent lamp pins are inserted. Snug fit and uniform spring tension hold the lamps securely in place.

ECONOMY — Turret lampholders have the ability to withstand rough handling without being damaged, which means that there is no costly replacement problem. Elimination of safety gadgets means another saving. In addition, the availability of three sizes of Turrets simplifies fixture design, and permits a wide selection of lamp arrangements.

CONVENIENCE —Lamps can be installed from either end of the Turret. Either face of the Turret is depressed by one end of the lamp, and the other end is then slipped into place. The lamps are automatically held in firm contact. Removal of dead lamps is equally easy. The starter socket is built-in, and is readily accessible.

SERVICE —The sturdy metal construction of General Electric Turret lampholders is designed to stand hard usage. All working parts are made to give long service—as long as the fixture itself lasts. This durability helps to provide top-notch fixture performance . . . maximum lighting efficiency.

To simplify your lighting maintenance, and to get the utmost in fluorescent lighting efficiency, it pays to insist on General Electric Turret lampholders in every industrial and commercial fixture you buy. Lamps are not staggered, but are mounted in a straight line, thus giving maximum efficient, shadowless lighting.

Just check the advantages of having these durable lampholders. Compare General Electric Turret lampholders with any other type of lampholder on the market. You'll find that they offer economy in upkeep, great safety, and long service.

General Electric Turret lampholders have made an outstanding record of dependable operation in thousands of fixtures now in use. They can contribute a great deal to your "better lighting," too.

A new General Electric Turret lampholder will accommodate three lamps. Two-lamp lampholders are also available, with receptacles spaced on 3½-inch or 5-inch centers. For information on G-E Turret lampholders, write to Section Q9-910, General Electric Company, Bridgeport 2, Connecticut.

*TRADE-MARK REG. U.S. PAT. OFF.

GENERAL GE ELECTRIC

ecutive offices and development laboratories. Here, besides, it operates Gray Marine Motor Co., a wholly owned subsidiary. Detroit is also the home of Continental Aviation & Engineering Corp. (51% owned), created before the war to do research and development work. Continental Aviation's programs include ram-jet and pulse-jet engines.

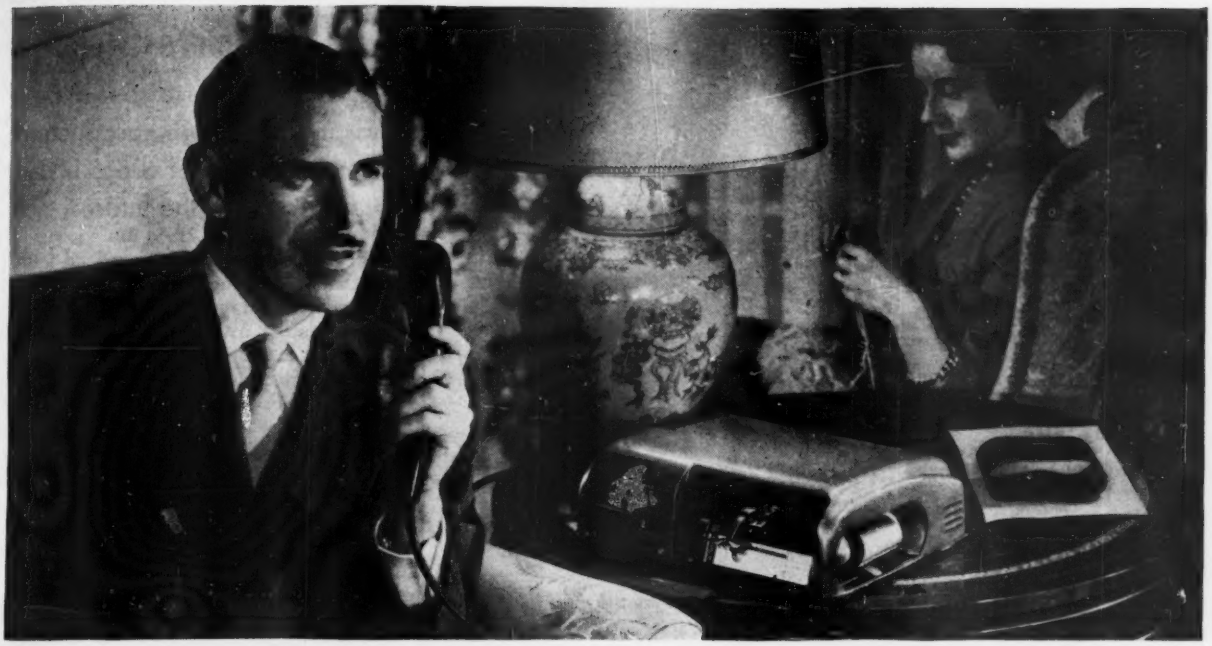
Detroit is home, too, for a big Continental Motors plant, mostly under management of Kaiser-Frazer Corp. K.-F. leased these facilities last year to do part of its own engine-building, while continuing to buy several thousand units a month from Continental at Muskegon. Continental kept enough space to continue clutch manufacture and minor diversified activities.

• **Where the Money Comes From**—Two years ago, Continental borrowed $5-million from banks, due serially until 1949. It also sold privately $5-million of 15-year, 3½% notes.

Last month it made a public offering of 300,000 shares of new common stock at $7.50 a share. Proceeds of this sale, the company said, will be used to help meet payment of the $3.5-million of bank loans due this year and next.

Chevrolet's New Head

W. F. Armstrong last week became general manager of General Motor Corp.'s Chevrolet Motor Division, largest producer in the auto industry. Since 1944, he has been in charge of G. M.'s manufacturing activity. In 1912, Armstrong joined Remy Electric Co., later a G. M. subsidiary. Except for a six-year stint as vice-president of Nash-Kelvinator, he has been with G.M. ever since. In his new post he succeeds the late Nicholas Dreystadt. Big, purposeful, quiet, Armstrong took the helm in Chevrolet within a few days of the time the division produced its 2-millionth vehicle.



ELECTRONIC WONDER!

Amazing new Dictaphone TIME-MASTER records on plastic belt!

The electronic TIME-MASTER is the neatest, most compact dictating machine that ever took a letter or trapped a thought!

And you can mail that voice letter as easily as any business correspondence. For the TIME-MASTER records on a small plastic Memobelt—just the size for a business envelope! Yes, this new dictating development means greater convenience in *every* way for you and your secretary. Nothing can match the TIME-MASTER for *all* dictation—in your office or home and on trips. Its recording is *outstandingly* clear and transcribable.

That's because the famous Dictaphone principle of *cylindrical* recording still applies. The Memobelt is the *only* plastic dictating medium that assures *both* uniform tonal clarity and quality from beginning to end, and uniform measured backspacing for dictator and transcriber alike.

No other dictating machine has *all* these advantages: Lightweight, all-metal construction, easily mailable and fileable plastic belt recordings, voice-perfect recording, constant groove speed, uniform backspacing, rapid place-finding and other features—*plus* famed Dictaphone dependability!

Twelve plastic belts—or three hours of dictation—will fit into your billfold. Hand them to your secretary for the easiest transcriptions she ever made.

FOR A DEMONSTRATION of the revolutionary new TIME-MASTER model, simply call your local Dictaphone representative or fill in the coupon below.

Dictaphone Corporation
Department F-10, 420 Lexington Ave., N. Y. C.

☐ Please show me the new TIME-MASTER.
☐ Please send TIME-MASTER literature.

Your Name_____
Company_____
Street Address_____
City & Zone_____ State_____

DICTAPHONE
Electronic Dictation

Only Dictaphone Corporation makes Dictaphone* Machines. (*Reg. U. S. Pat. Off.)

EVERY HYSTER DISTRIBUTOR IS A LIFT TRUCK SERVICE STATION

HYSTER "40" Lift Truck — 4,000 lbs. capacity. Small, fast, maneuverable. Low cost per ton handled . . . Hyster's 7 models, from 2,000 lbs. to 30,000 lbs. capacity, are equipped with pneumatic tires. Write for literature.

Every Hyster Distributor is a *Service Expert.* He *must* be by the terms of his Hyster contract. Count on him when your lift truck needs service.

Factory-trained mechanics, genuine parts, experience and know-how are ready for you *when you need them* at your Hyster distributor lift truck service station.

GO TO YOUR HYSTER DISTRIBUTOR FOR CURRENT DELIVERY

ALASKA—Northern Commercial Co.
BIRMINGHAM, ALA.—S & T Equipment Co., Inc.
BROOKLYN, N. Y.—A. S. Rampell
BUFFALO, N. Y.
Rapids Handling Equipment Co.of Buffalo, Inc.
CALGARY, ALTA.
A. R. Williams Machy. Western, Ltd.
CHATTANOOGA, TENN.—Embry Brothers, Inc.
CHICAGO, ILL.—Hyster Company
CINCINNATI, O.—Oral T. Carter & Associates
CLEVELAND, O.—Morrison Company
DALLAS, TEX.—C. H. Collier Company
DENVER, COLO.—Paul Fitzgerald
DETROIT, MICH.—Bentley & Hyde
GRAND RAPIDS, MICH.—Bentley & Hyde
HALIFAX, NOVA SCOTIA
A. R. Williams Machy. Co., Ltd.
HONOLULU, T. H.—Electric Steel Foundry Co.
HOUSTON, TEX.—C. H. Collier Co.
INDIANAPOLIS, IND.—C. H.Ellis Co., Inc.
JACKSONVILLE, FLA.
L. S. Teague Equipment Co.
KANSAS CITY, MO.
Industrial Power Equipment Co.
LOS ANGELES, CALIF.—Hyster Company
LOUISVILLE, KY.—Embry Brothers, Inc.
MEMPHIS, TENN.—Hyster Co. of Louisiana, Inc.
MILWAUKIE, WIS.—Hyster Company
MINNEAPOLIS, MINN.—W. S. Nott Company
MOBILE, ALA.—S & T Equipment Co., Inc.
MONTREAL, P. Q.
A. R. Williams Machy. Co., Ltd.
NASHVILLE, TENN.—Embry Brothers, Inc.
NEW ORLEANS, LA.
Hyster Company of Louisiana, Inc.
NEW ROCHELLE, N. Y.
Eastern Industrial Sales Co.
OTTAWA, ONT.
A. R. Williams Machy. Co., Ltd.
PHILADELPHIA, PA.
Rapids Handling Equipment Co. of Phila., Inc.
PHOENIX, ARIZ.—Equipment Sales Company
PITTSBURGH, PA.—Equipco Sales Company
PORTLAND, ORE.—Hyster Sales Company
RICHMOND, VA.—Richmond Auto Parts, Inc.
ROCHESTER, N. Y.
Rapids Handling Equipment Co. of Buffalo, Inc.
ST. JOHNS, N. F.—City Service Company, Ltd.
ST. LOUIS, MO.—Wharton L. Peters, Inc.
SALT LAKE CITY, UTAH
Arnold Machinery Company
SAN FRANCISCO, CALIF.—Hyster Company
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VICTORIA, B.C.
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HYSTER

Car Exports Slump

Dollar shortage abroad and more foreign production are chief causes of drop. It can mean trouble in the future.

In the face of a domestic sellers' market that is as firm as ever, exports of American motor vehicles have taken a sharp slump. This situation means little now; cars can be sold here without trying. But a continued poor foreign market for U. S. cars, coupled with increased competition from foreign producers, can mean long-term trouble for the American auto industry.

• **Comparison**—Here is the picture, percentagewise, from figures available this week: During the first seven months of last year, exports of all motor vehicles amounted to 11.2% of total unit production in this country. With an increase in total production of more than a quarter-million units in the same 1948 period, exports have fallen off to about 8.7% of production. The drop comes to nearly 50,000; that means close to $100-million.

All this happened despite increased demand from nations that have recovered enough from the war to think of something besides food. Belgium and South Africa, both good customers last year, are much better ones now; they will probably buy 100,000 American cars, trucks, and buses by the end of 1948. Brazil, the second biggest buyer of American cars in 1947, is buying even more now; it will probably top the list this time. But even boosts as big as these are not stopping the downward trend.

• **Two Causes**—Lack of money seems to be the root of this evil. It makes itself felt in two distinct ways:

(1) Shortages of American dollars in countries like Canada and Argentina have resulted in rigid government control of purchases of American goods, mainly automobiles.

(2) The need for American dollars has pushed British and French production of cars for foreign markets to the point where these nations are successfully competing with the United States.

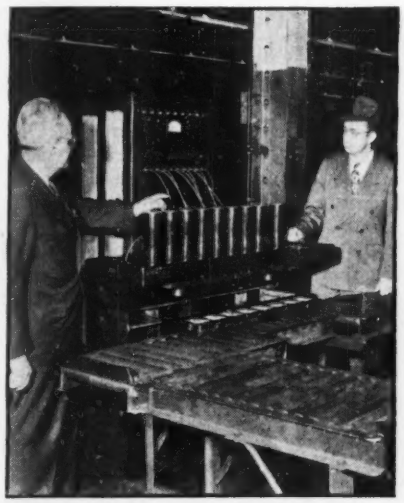
• **80% Drop**—Argentina was the biggest buyer of American motor vehicles last year; it took 64,426 units, or more than 11% of all U. S. exports. This year a system of deferred payments of dollars has made American producers reluctant to sell to that country. For the first six months of this year Argentina got 4,675 cars and trucks, as against 30,000 for the same period last year.

A similar situation exists in Canada. Government control of dollars has cut

Canadian purchases from 26,312 units between January and July of last year to only 3,196 in the comparable period this year. And Canada was No. 3 on last year's list of American-car customers.

• **Britain Leads**—During June, latest period for which there are figures, Britain exported more passenger cars than did the United States. Even including trucks and buses, Britain's figure for June was only about 500 less than American exports. The reason is that most British-made cars—about 60%—are exported. For France, no exact figures are available, but exports comprise an even greater percentage of that country's production.

Britain has moved into at least one former American market—Canada. In June, Canada bought 1,300 English cars, only 250 from this country. A year ago those proportions were more than reversed.



INVENTOR H. M. Poole shows E. O. Corbin, Olds plant superintendent, how . . .

Sound Waves Work For Auto Makers

Sound waves are taking a job in the automotive industry.

The Olds Motor Division of General Motors Corp. at Lansing, Mich., is using a "Cavitometer" in the development of its high-compression engine (BW—Apr.17'48,p80). This is a device that measures cylinder-head volumes with sonic vibrations inaudible to humans. The machine does its work automatically, checks more than 150 heads an hour, detects variations in volume as small as one part in 1,500.

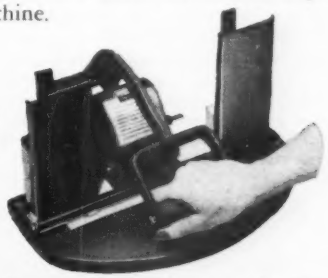
The machine, made by Poole Mfg. Engineers, Dallas, Tex., replaces the old method of filling the cavity with fluid, then reading the volume after the fluid has been poured into a graduated flask.

Why are the better informed addressing machine users everywhere changing to the *Elliott* addressing system?

1. Any typist with any standard typewriter can stencil your addresses into Elliott address cards and thus keep your mailing list up-to-date every day.

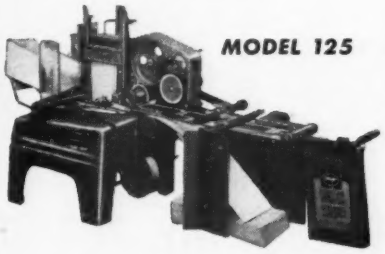
2. With the Elliott Addressing System a typist can stencil and prepare for filing from four to seven Elliott address cards in the same time it takes to emboss and assemble one old-fashioned card index metal address plate with an old-fashioned embossing machine.

$45 ADDRESSERETTE



3. For mailing lists of a few hundred names, Elliott offers this new $45.00 Addresserette into which the addresses are tray loaded and tray unloaded 125 at a time.

MODEL 125



4. For straight address work, Elliott offers this new $185.00 addressing machine. It automatically feeds and addresses envelopes, post cards and other forms at a speed of 125 per minute which is from three to five times faster than any competing addressing machine in its price class.

5. For large Mail Order, Public Utility, Publishers, etc., Elliott makes more than 100 different sizes and models of addressing machines ranging in price from $500.00 to $15,000.00. They accomplish results that no competing addressing machines can accomplish.

6. The mechanical engineers of America's biggest concerns bring their problems to Cambridge, Mass., and in the majority of cases they discard old-fashioned mechanical addressing equipment and install better, faster, more versatile Elliott Addressing Machines.

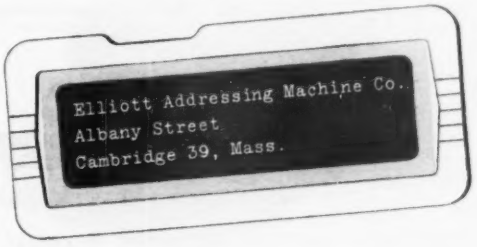
7. And, it's not difficult to change to the Elliott System. Because Elliott supplies the stencilled address cards in special filing trays to fit your present metal address plate filing cabinets at a charge of only 2¢ per address—and Elliott makes a cash allowance for old-fashioned addressing equipment thus displaced.

We have two very interesting pocket size booklets that we would like to send to you.

THE ELLIOTT ADDRESSING MACHINE COMPANY

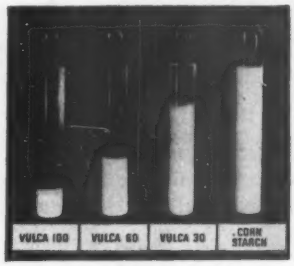
Dept. 9-B, 151 Albany Street
Cambridge 39, Mass.

With Branch Offices in all large cities



NEW! 'VULCANIZED' STARCH OFFERS YOU...

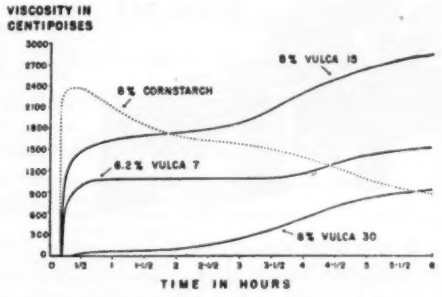
...CONTROLLED SWELLING



VULCA® starches are ether derivatives of ungelatinized starch. They are graded according to their resistance to swelling in boiling water or cooking in water. The degree to which individual VULCA granules expand depends on the grade used, but in all cases they show greater toughness and resistance to rupture than all other starches. The settling test illustrates the comparative swelling of three grades of VULCA starches — VULCA 100 (completely non-swelling) and the intermediate grades 60 and 30 — as compared to standard corn starch after cooking for 20 minutes. Each graduate contains a 5% starch in water mixture. Note that the difference in degree of swelling of the three grades of VULCA starches is indicated by the volume of settled starch, while the corn starch has been completely dispersed, resulting in gelled paste. In as little as three parts of boiling water VULCA 100 will give a fluid suspension, the individual granules swelling approximately only 5 microns. Since VULCA is available in any desired grade, viscosity of a mixture using these starches as a base is subject to rigid control.

...CONTROLLED VISCOSITY

VULCA pastes maintain their viscosity after prolonged cooking, at 92°C, as shown by continuous viscosity curves. Note that while corn starch soon attains its maximum or peak viscosity and then begins to decrease in viscosity, the VULCA viscosity curves do not exhibit peaks and do not show a loss of viscosity on prolonged cooking. VULCA starches are resistant to degradation by acids and amylolytic enzymes. Under a given set of drastic gelatinizing conditions where corn starch paste has already passed its peak viscosity and is breaking down, VULCA starch of the proper grade would just be reaching *its* peak viscosity. The amazing inertness of VULCA 100 is aptly demonstrated by . . . its resistance to those agents that completely gelatinize starch . . . its stability during autoclaving and pressure cooking . . . and its capacity for steam sterilization without any appreciable change in its powdery appearance.



A FEW INDUSTRIAL APPLICATIONS

FOOD: As a thickener for canned foods. With VULCA, less 'starch' is used to achieve any given thickening effect, resulting in improved appearance, consistency and reduction of 'starchy' appearance and flavor. **COSMETIC:** As a base for powders, rub-off and massage creams. VULCA is non-irritating. In addition, it is readily absorbed by the body when introduced into open cuts or abrasions. **MISC:** As a thickener of the alkaline electrolyte solutions in storage batteries where VULCA starches offer more stable viscosities. Also for rubber dusting and paper coating.

Further information and research samples can be obtained from National Starch Products, Research and Development Laboratories, 270 Madison Avenue, New York 16, N. Y.

National STARCH PRODUCTS

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

1948: Big Year

Eight-month auto output is ahead of year ago. Trucks seen setting new record; cars will fall short only of 1929.

Auto production, despite shaky steel supplies, is doing even better than expected this year. Total output of U. S. and Canadian plants in the first eight months was estimated last week by Ward's Reports, Inc., at 3,604,600 cars and trucks. Last year in the same period, volume came to 3,228,198 vehicles.

If operations continue at the present pace for the rest of the year, total production will be about 5.4-million cars and trucks. In any event, 1948 is almost sure to be the second best year in automotive history, ranking between the 5,621,045 of 1929 and the 5,108,992 of 1941.

• **Leaders**—Chevrolet is again the pacesetter. Its United States production in the first eight months totaled about 525,000 cars and 265,000 trucks. On that basis, 1948 will see Chevrolet rack up another million-vehicle year.

Ford is still the runner-up, with about 285,000 passenger cars and 230,000 trucks for eight months. The lengthy 1949 model changeover shutdown at Ford pulled down its total, but it is still far ahead of Plymouth, the No. 3 producer. Buick, Dodge, Pontiac, Studebaker, Kaiser-Frazer, International, and Nash round out the first 10. If K.-F. production is divided between its two nameplates, that producer drops out of this group, and Hudson advances to 10th place.

• **Lots of Trucks**—Truck volume this year seems headed for a new production record. During the first eight months, output is estimated at 1,013,900. Last year, the same period saw 870,220 assemblies.

If the present rate continues, last year's record output of 1,331,583 trucks will be beaten in 1948.

• **The Figures**—Estimated production for the first eight months breaks down as follows:

	1948	*1947*
United States		
Passenger cars	2,495,050	2,253,662
Trucks	947,800	808,615
Total	3,442,850	3,062,277
Canada		
Passenger cars	95,650	104,316
Trucks	66,100	61,605
Total	161,750	165,921
Total passenger cars....	2,590,700	2,357,978
Total trucks	1,013,900	870,220
Grand total	3,604,600	3,228,198

JUST LISTEN TO THE GIRLS IN YOUR OFFICE!

"I want a new typewriter!"

"We want new Royals!"

WHY THE PREFERENCE FOR ROYAL IS BETTER THAN 2 TO 1!

Surveys show that girls who type prefer Royals 2¼ to 1 over any other make of standard office typewriter.

Even more—*the preference for Royal equals the preference for the next three most popular standard office typewriters combined!*

Why this overwhelming preference for one typewriter?

Because Royals have time-saving, work-saving features not found on any other make. Because Royals are more durable—sturdier.

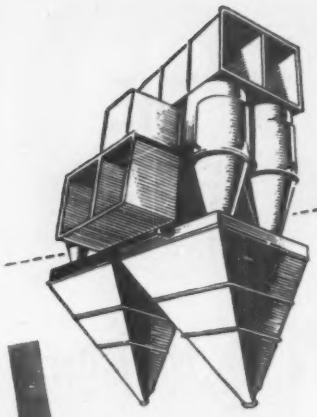
They spend more time on the job, take less time out for repairs.

So give the girls in your office the typewriter they prefer using. They'll do more work, better work. With Royal, you'll get the maximum return for your typewriter investment!

ROYAL

World's No. 1 Typewriter

Made by the world's largest manufacturer of typewriters



PRACTICAL

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RECOVERY

can be a reality

. . . if you consider it logically. Too few dollars can buy disappointing efficiency, yet you can over-invest with same result. That's where the Buell van Tongeren Cyclone comes in. With a patented "Shave-Off" to overcome the "double eddy" evil, it can be big enough to prevent plugging. Individually engineered for each specific application. Complete data in the 1948 Buell catalog. Write: Buell Engineering Company, 60 Wall Tower, New York 5, N. Y.

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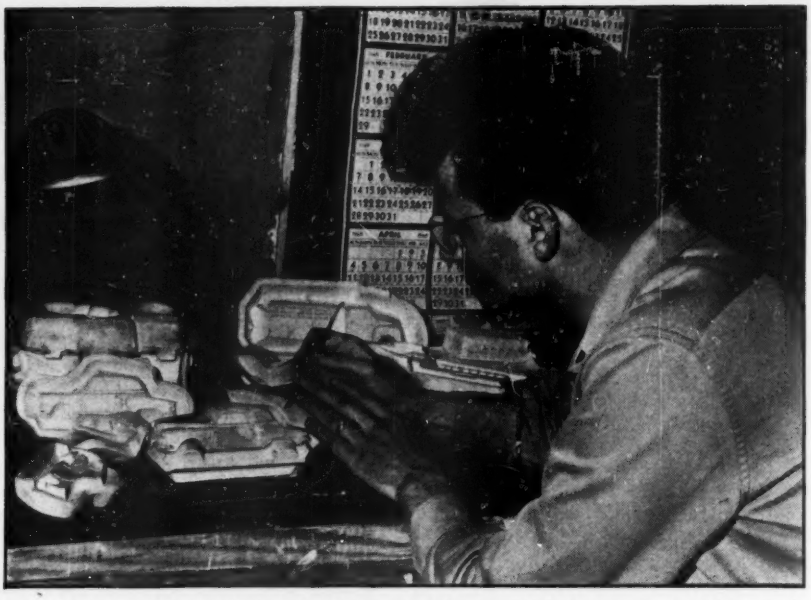
Engineered Efficiency in

DUST RECOVERY



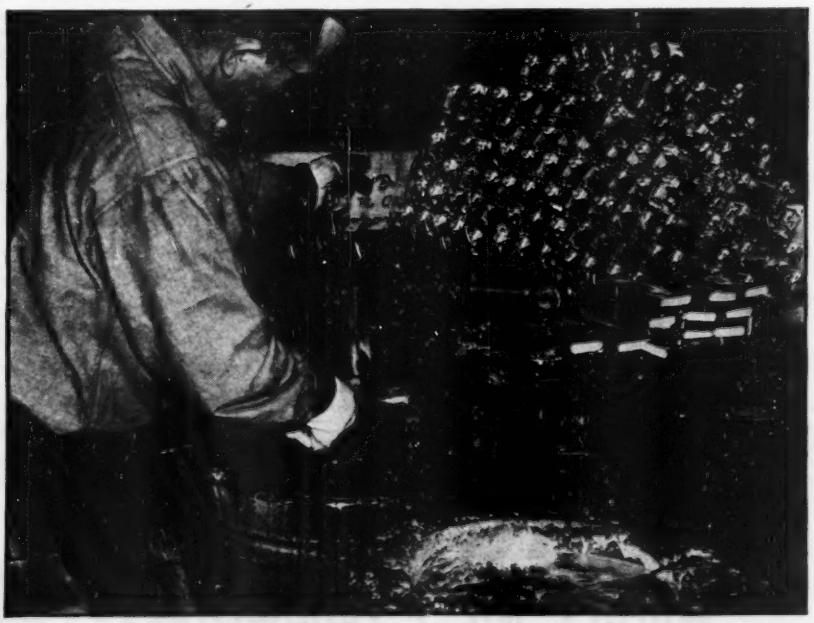
1 National Products Co.'s first step in mass-producing miniature cars is to make a scale replica in plaster, just as big car makers do. A bronze mold is then cast from this

Little Cars: Big Business

Makers of miniature automobiles, who once did their work almost exclusively for the small-fry trade, have found a big new market: auto dealers who can't get their hands on enough of the real things. The dealers hand them out to customers on their waiting lists to remind them that they haven't been forgotten.

And, since the dealer's name is stamped on the roof of each little car, the customer isn't likely to forget him, either. The little cars serve a final goodwill use—as toys for youngsters.

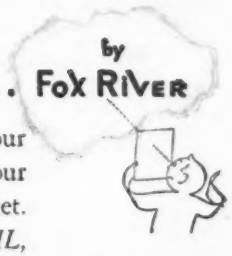
One of the busy miniature makers is National Products Co., Chicago. On an assembly line strikingly similar to that of a real automaker, the company is turning out replicas of real-life cars by the thousands. Some of the models it is making are Studebakers, Buicks, and Chevrolets.



2 Skilled foundryman makes the castings. He pours molten metal in the mold, slushes out excess within few seconds, leaving a thin layer clinging to mold sides. (TURN TO PAGE 60)

Write Money-Making Mail

Introducing a new service to American business by the producer of fine business paper watermarked... by Fox River



Here's a way to put new life in your business letters . . . more power in your pen . . . more money in your pocket. How? Read *MONEY-MAKING MAIL*, the series of free, new booklets "by Fox River" that will teach you the secrets of the letter experts.

Cotton-fiber Bond, Onion Skin and Ledger "by Fox River" — crisp, clear and sturdy fine paper that represents you well.

You'll learn how to make your words reach out and pull business prospects right into the center of your thinking. You'll learn to do it easily with a fresh, friendly approach.

First booklets — the story of *MONEY-MAKING MAIL* and *How to Put Sock in Your First Sentence* — are waiting for you right now. So follow the lead of other successful business men. Learn how to put more pay in what you say. Write today — all booklets *free!*

1 *Not just the finest paper ...*

2 *Not just the quality printing ...*

3 *Not just the expert typing ...*

4

The Real Pay is what you say!

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Dr. Robert R. Aurner
Director, Better Letters Division
Fox River Paper Corporation

Author of the *Money-Making Mail* booklets, Dr. Aurner is a nationally-recognized letter authority. For 18 years he was ranking professor of business administration at the University of Wisconsin and member of the Lecture Bureau. His many books on the art of letter writing are widely used. He has helped thousands of successful business men. He can help you.

4 WAYS TO BETTER LETTERS

Write Today!

FOX RIVER 1310 APPLETON ST. — Better Letters Division — **FINE PAPERS** APPLETON, WISCONSIN

Please send me booklets on "Money-Making Mail". I'm attaching our letterhead with this coupon.

Name.....

Street Address.....

City..... **State**.....

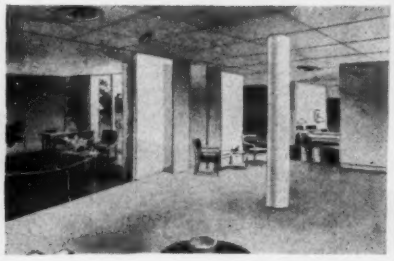
adventures in heating and air conditioning

whether you work with

MICROPHONES or

MICROMETERS

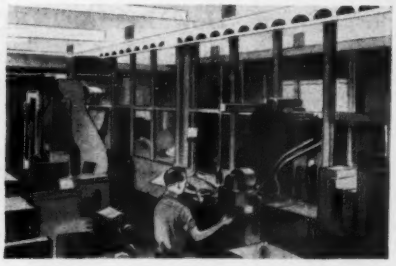
there is a TRANE System for you



HEATING AND AIR CONDITIONING FOR *Comfort*

This windowless radio station in the South needed year-round air conditioning. The Trane System selected produces perfect weather quietly, with room-by-room control.

This handsome furniture display room is either crowded or nearly empty. Two parts of the Trane System work separately or together to provide the flexibility the varying load demands.



HEATING AND AIR CONDITIONING FOR *Processes*

Aspirin is stored in this warehouse. Improper temperature and humidity may spoil the aspirin, so a Trane System gives aspirin and employees perfect conditions throughout the year.

Thousandths of an inch are important in this precision tool room. Temperature changes affected tolerances so much that a Trane System was installed to keep production accurate.

There is a Trane System to solve every kind of heating and air conditioning problem efficiently, whether it be comfort or process — domestic, commercial, or industrial. Trane Systems are designed to fit your application by architect, engineer, or contractor. 200 Trane Sales Engineers offer their counsel. *Users' names on request.*

TRANE

MANUFACTURING ENGINEERS OF

HEATING and AIR CONDITIONING systems

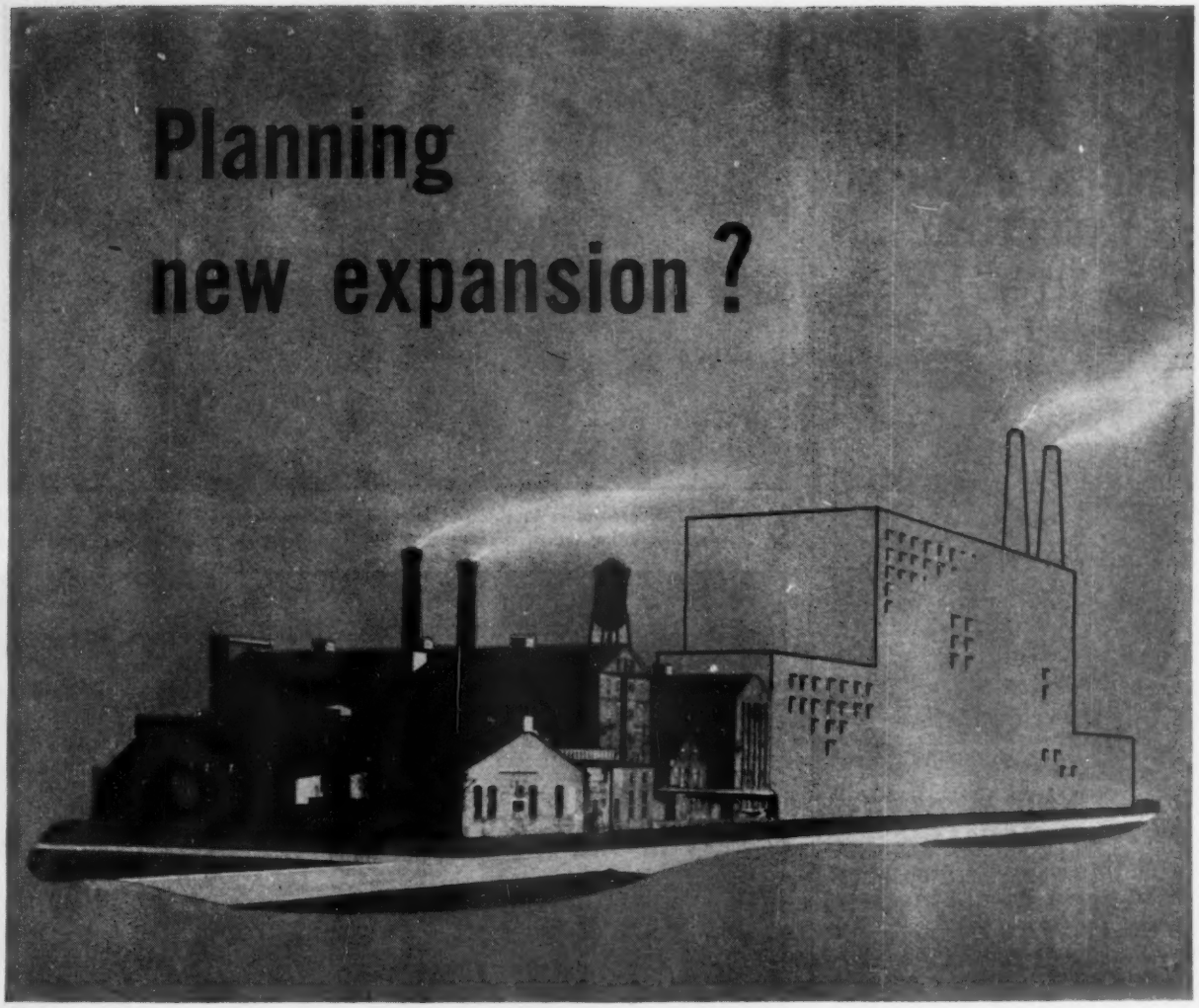
THE TRANE COMPANY, LA CROSSE, WISCONSIN

ALSO, TRANE COMPANY OF CANADA, LTD., TORONTO

3 Castings get a polishing off on the buffing wheel. This removes any rough edges

4 An automatic hammer flattens out axle ends, secures wheels

5 Models, held in fixture, are sprayed with paint in miniature booth, just like big cars. (TURN TO PAGE 62)



LET CITIES SERVICE ANALYZE YOUR NEW LUBRICATION REQUIREMENTS!

GET SET NOW for lubrication service to keep in step with your new plants . . . new equipment . . . new machinery. Be ready to meet the tougher, more exacting requirements of "higher output machinery," faster-moving assembly lines, longer hour-for-hour performance of your operating equipment.

Basic, intelligent planning now with the cooperation of lubrication engineers thoroughly versed in modern production processes is sound profit insurance for the future.

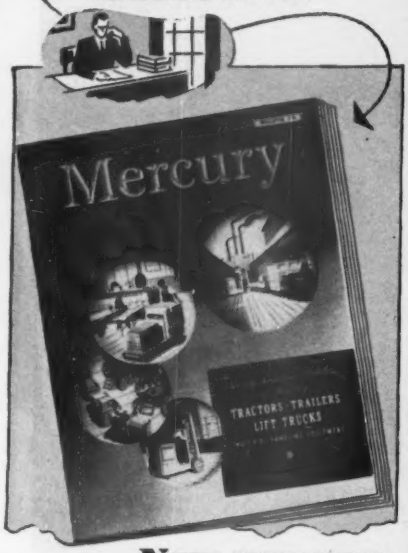
The Lubrication Engineers of Cities Service are adequately prepared to help you with these problems. They know new techniques . . . new methods. They know how to chop lubrication costs . . . increase efficiency. They know what proper types and grades of oils, greases, fuels and solvents will best meet your individual requirements.

At absolutely no obligation to you, a Cities Service lubrication engineer will make a thorough, on-the-spot analysis of your lubrication requirements. His recommendations may substantially cut your operation (and maintenance) costs. Write Cities Service Oil Company, Room 194, Sixty Wall Tower, New York 5.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

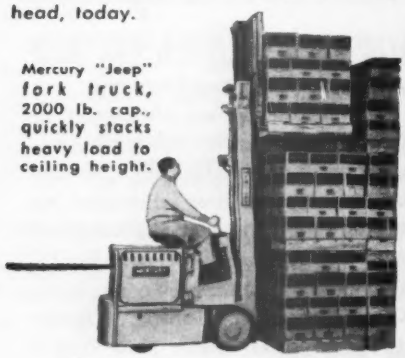
Free TO EVERY MATERIAL HANDLING EXECUTIVE!



. . . NEW MERCURY 52 PAGE CATALOG!

ILLUSTRATES and describes the complete line of Mercury industrial fork trucks, lift trucks, tractors and trailers. Includes features, specifications and application.

It's the most comprehensive literature released by The Mercury Manufacturing Company in its 36 years' material handling experience. A *new* and *important* cost reduction source for every handling executive. Request your free copy of Catalog No. 7-11 on company letterhead, today.



Mercury "Jeep" fork truck, 2000 lb. cap., quickly stacks heavy load to ceiling height.

THE MERCURY MANUFACTURING CO.
4146 S. Halsted Street
Chicago 9, Illinois

MERCURY

TRACTORS • TRAILERS • LIFT TRUCKS

6 Infrared ovens, similar to those in large automobile factories, are used to dry small cars after painting. At a temperature of 300 F, the cars are baked around 15 minutes

7 Special silk-screen process stamps the name of regular-size-auto dealer on roofs of the miniature cars he orders. This keeps his name before anxious customers

8 Wrapped and boxed, the little cars are shipped out in cartons holding about 40 vehicles. The models end up as toys, ornaments, bookends, paperweights

She's a Problem to Many Men

... from head to foot

Keeping her healthy and attractive is the business of many men, and the business of Sonneborn is to solve problems created by her needs and preferences.

Quite literally, this young lady lives with Sonneborn products all day and night. Sonneborn White Mineral Oils and Petrolatums – products of superior quality, purity and stability – are used in her soaps and cosmetics, her pharmaceuticals and hair preparations.

Sonneborn's White Oil and Petrolatum Division also furnishes materials for paper, plastics, canneries, chemical specialties, rubber and many other manufacturers – for hundreds of products from baby oil to printing ink. Investigate their quality... also check the coupon for literature on products of other Sonneborn divisions which may be helpful to you in solving basic problems.

SONNEBORN ... Oil Refiners and Manufacturing Chemists

Serving Four Basic Management Problems

PROPERTY • PRODUCTION • TRANSPORTATION • SALES

CHECK LITERATURE YOU WANT AND MAIL COUPON NOW

WHITE OIL and PETROLATUM DIVISION

IMPROVE PROCESSING AND PRODUCTION – Specific properties of Sonneborn Refined Petroleum Products suitable for a wide range of product and processing applications.

BUILDING PRODUCTS DIVISION

PROTECT AND PRESERVE PROPERTY – Quick, easy, economical ways to construct and maintain floors, walls, ceilings, roofs, etc., with Sonneborn "Building Savers"

AMALIE LUBRICANTS DIVISION

LOWER COSTS OF TRANSPORTATION – The fundamentals of good lubrication for gasoline-driven fleets and Diesels; how AMALIE Motor Oils and Lubricants give more protection.

TEXTILE CHEMICALS DIVISION

INCREASE CUSTOMER DEMAND AND PREFERENCE – How FYBROL 1115 (one of many Sonneborn products for textile processing) improves mill efficiency and woolen fabrics.

L. SONNEBORN SONS, INC., Dept. BW5, New York 16, N. Y.

NAME ..... TITLE .....

COMPANY ..... ADDRESS .....

CITY ..... ZONE..... STATE.....

Let these 1½ and 2 h.p. RED SEAL ENGINES build Goodwill for You, too

AU-7
AU-7B

AA-7
AA-7B

6-to-1 Reduction Gear, with drive shaft in any of four different positions, is available for the AA7, AA7-B, AU7, and AU7-B engines.

Here are four great performers, the Continental Red Seal 1½ and 2 h. p. engines which are building goodwill for more and more manufacturers in the vehicle and equipment fields. Thousands of them are operating economically, dependably, in lawnmowers, scooters, power bikes, tractors and specialized machines, and as power plants on farms, and in shops. They're built to RUN, and STAY RUNNING, and they're backed by a parts and service network reaching from coast to coast.

PERFORMANCE — Torque substantially higher than in other engines of their ratings assures ample reserve power for suddenly applied loads. These AA and AU series engines cost less to run, and run longer without service, because their full rated horsepower is developed at very moderate engine speed — as low as 2600 r.p.m. in the AA7 and the AU7.

WIDE ADAPTABILITY — Compactness, balance, and an extremely low center of gravity adapt these models to an unusually broad range of applications, a range widened further by the fact that identical performance characteristics are available in models of differing profile and shape. Specify AA7 (1½ h.p.) or AA7B (2 h.p.) where vertical space is limited; AU7 (1½ h.p.) or AU7B (2 h.p.) where height is less critical than horizontal dimensions.

Let these products of Continental Motors, engine specialists for nearly half a century, help sell your product — help KEEP it sold. Installation drawings and full information on request.

Red Seal AA7, AA7-B, AU7 and AU7B engines, as well as genuine Continental parts and factory-authorized service, are available through the nationwide network of Continental dealers.

Continental Motors Corporation

620 FORD BUILDING DETROIT 26, MICHIGAN

READERS REPORT:

Prices in Terms of Work

Sirs:

May I congratulate you on the article entitled "Farm Income Will Stay High Despite Price Slips" [BW—Aug.7'48, p19]. The specific item that I am talking about is the illustration . . . as to the number of head of cattle it took the farmer in 1940 to buy a Buick and the number of head it would take him today; also the yield in acres of corn it would take to buy a refrigerator in 1940 as compared with today. The illustration proves the farmer is much better off today than he was in 1940, everything taken into consideration.

If they are available, I would appreciate some similar comparisons in other fields—such as how many days' work it takes a carpenter to pay for a house, 1940 vs. today; how many days' work for an automobile-plant worker to pay for a suit, etc.

JOSEPH H. SCHULTE
DIRECTOR OF RESEARCH,
KAISER COMMUNITY HOMES,
LOS ANGELES, CALIF.

• By and large, industrial workers have not done so well as the farmers. It's a lot harder to get figures on this that are strictly comparable in all respects. But we were able to get some data from recognized statistical sources which show the general trend. Here's what we found:

A carpenter getting union-scale wages in 1940 had to put in 473 eight-hour days to buy a six-room house; today he has to work 739 days. An automobile worker had to work 21 hours to buy an inexpensive suit of clothes in 1940; today he has to work 35 hours to buy the same suit.

Unskilled workers have done better—though still not so well as the farmers. A common laborer in a steel mill would have had to work for 140 days to buy a small new automobile in 1940; today it would take him only 124 days, despite the rise in the cost of new cars.

Barge Line Stirs Interest

Sirs:

Ever since your publication of an article on "The Barge Line" and its entrance into the Alaska shipping trade [BW—Mar.20'48,p52], we have received a number of inquiries from all parts of the country concerning our service.

Several of these letters from the East and Canada mentioned the publication specifically, and a number undoubtedly stemmed from the article despite lack of direct reference. One of the most in-

has modernized the savings bank's system!

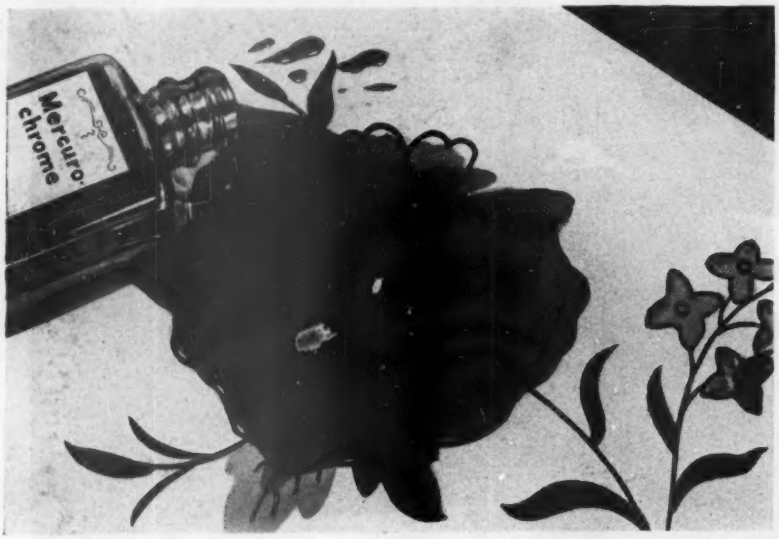
See what it can do for your business! Businesses of every type and size all over the country report savings ranging up to 30% after mechanizing their accounting with Nationals. Savings which often paid for the whole National installation during the first year—and then ran on year after year as lower operating costs. Ask your local National representative to check your present set-up and report specifically the saving you can expect. Of course, there is no cost or obligation.

National
CASH REGISTERS • ADDING MACHINES
ACCOUNTING MACHINES

THE NATIONAL CASH REGISTER COMPANY, DAYTON 9, OHIO

We Invite You to Accept this CHALLENGE!

We want 10,000 Skeptics to smear, splatter, write or even walk on Stainproof Varlar and try to mutilate the first-day beauty of this durable, washable wall covering.



WE SAY you can splatter, smear, write or even walk on Stainproof Varlar —then wash this revolutionary wall covering sparkling-fresh with ordinary soap and water.

Just try to mutilate Varlar's fresh, stainproof beauty. Laboratory tests and actual use prove that oil, ink, grease, jam, crayon, lipstick—STAINS OF ALL KINDS—wash off Varlar quickly, easily with ordinary soap and water.

Even 25,000 washings can't damage Varlar's life-long stainproof beauty. That's because Varlar is made by an entirely new process. Has no surface coating to crack and peel. No brittle, plastic "skin" to chip or discolor. Varlar's rich, new coloring and stain resistance go *clear through*, last for life.

All 93 stunning styles go up easily as wallpaper, resist water, fire, bacteria and vermin, too! Florals, plaids, weaves, pictorials, stripes and solid tones offer durable new wall beauty, cleanliness and protection for every private or commercial need.

But don't take our word for it! We dare you to test amazing Stainproof Varlar for yourself. Splatter, smear, write or even walk on it. Then quickly, easily wash it clean with ordinary soap and water. Mail the attached coupon for your test size sample of Stainproof Varlar right away.

Never Before Such Enduring Beauty

VARLAR

Stainproof Wall Covering

VARLAR, Inc.

DIVISION OF UNITED WALLPAPER CHICAGO

ACCEPT THIS CHALLENGE, NOW!

VARLAR, Inc., Dept. BW-98
Merchandise Mart, Chicago 54, Illinois

I'll take your dare! Send my free sample of stainproof Varlar and I'll test it for myself.

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

teresting letters resulting from your story came in August from Switzerland.

We thought you would be interested in this proof of a very wide and very loyal public reading your magazine.

We would like to express our appreciation for the attention you gave "The Barge Line" and for your capable coverage of our service. The fact that you found our operation newsworthy has been of assistance, as "The Barge Line" continues to serve the Territory of Alaska with increasing success.

T. A. THRONSON
TRAFFIC AND OPERATING MANAGER,
ALASKA FREIGHT EXPRESS CORP.,
SEATTLE, WASH.

Congratulations from Hawaii

Sirs:

We have read with interest your article on Hawaii [BW—Aug.7'48,p74].

We feel that this is one of the best articles on Hawaii which has been published in a national magazine in recent years.

May we congratulate you on this project.

SLATOR M. MILLER
SECRETARY,
HAWAIIAN SUGAR PLANTERS' ASSN.,
HONOLULU, T. H.

EYECATCHER in an Oklahoma City drug store window (BW—Aug.7'48,p51)

She Sets a Bad Example

Sirs:

You printed a picture [above] which illustrates an extremely hazardous situation. The phone may have been a prop only, and not connected. But electrocutions in bathrooms have been sufficiently frequent, through bathers turning on lights, radios, heaters, etc., to warrant discouraging the use of any electrical appliance while in the tub. The drug store should certainly be dis-

We changed from steam to an **Industrial Brownhoist Diesel Crane**

It paid for itself in four years!

Here are the figures to prove it:

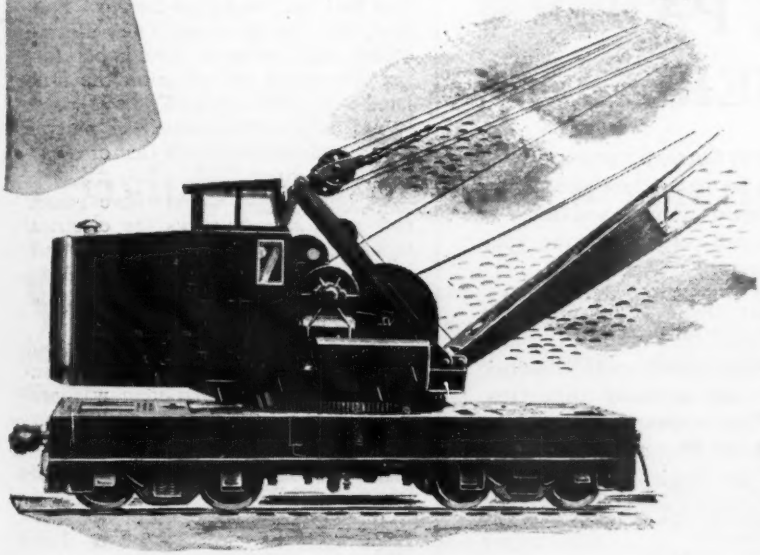
SAVINGS IN FUEL PER DAY $13.40
(Based on 1½ tons coal per day at $10 a ton, against 16 gallons of fuel oil at 10¢ a gallon.)

SAVINGS IN LABOR PER DAY $15.50
(Unproductive firing, banking, cleaning time — 2 hours for engineer at $1.75 per hour, and 8 hours fireman, at $1.50 per hour.)

TOTAL FUEL AND LABOR SAVINGS PER YEAR.. $7,514.00

AND WE INCREASED OPERATING TIME BY 65 DAYS A YEAR!

It takes two hours a day on the average for firing up, banking, taking coal and water, boiler washouts, etc. That figures to 10 hours a week, 520 hours a year, or 65 extra days of productive crane time each year.

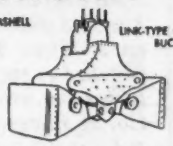


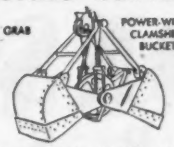
BESIDES THESE IMPORTANT EXTRAS:

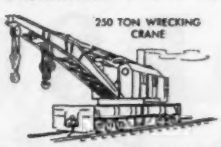
Safer, cleaner operation; greater production and less operator fatigue because of air operated controls; reduced maintenance time, about one-half that of steam, and elimination of smoke nuisance and fire hazard. Write today for complete information.

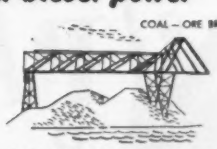
BROWNHOIST BUILDS BETTER CRANES . . . with Diesel power

ROPE-REEVE CLAMSHELL BUCKET


LINK-TYPE ORE GRAB BUCKET


POWER-WHEEL CLAMSHELL BUCKET


250 TON WRECKING CRANE


COAL – ORE BRIDGE

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICH. • **DISTRICT OFFICES:** NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO • **AGENCIES:** DETROIT, BIRMINGHAM, HOUSTON, LOS ANGELES, PORTLAND, SAN FRANCISCO, SEATTLE, SPOKANE, CANADIAN BROWNHOIST LTD., MONTREAL, QUEBEC.

PARSONS
COTTON FIBER PAPERS
LIKE ERASERS

Whether your records are on cards or sheets, whether your system involves bound books, loose-leaf, visible index or machine bookkeeping, it should be on paper made with new cotton fibers. No other practical fiber wears like the long, tough cotton fibers in Parsons papers.

There'll be no dog-eared corners, no cards or sheets illegible after many entries. Parsons papers and cards take more erasing than other papers because they're made with *new* cotton fibers, according to the Parsons formula. Available in a wide range of weights and colors—and *matched* colors to make your record-keeping easier.

Look for these five points of superiority in Parsons Papers: longer life, better wear, superior writing and erasing qualities, outstanding appearance, and the look and feel of *quality* that reflects *prestige* on your organization. Parsons Paper Company, Holyoke, Massachusetts.

It Pays to Pick
PARSONS
PAPERS
BETTER FIVE WAYS
Made with New Cotton Fibers
© PPC 1948

couraged from promoting such a practice, for the American public adopts conveniences very easily.

P. M. Weiss

BUDGET SUPERVISOR,
CRANE CO.,
CHICAGO, ILL.

Design of New Toledo Scale

Sirs:

We were very pleased to see the recognition you gave to the new Toledo Guardian 70 Duplex Scale [BW—Aug. 14'48,p58]. We would like to take this opportunity to state that Mr. J. M. Little of J. M. Little and Associates, Toledo, Ohio, was our design counsel for this machine, and was responsible for the exterior appearance and the engineering-design of the housing.

As you perhaps have heard, the new Guardian 70 has received the top award in the Modern Plastics Competition, in the Store & Business Equipment classification. This is announced in the September issue of Modern Plastics, sponsor of the competition.

C. H. Cadwallader

TOLEDO SCALE CO.,
TOLEDO, OHIO

Pintype Sockets

Sirs:

We note in your New Products section that the On-A-Lite Corp. of Portland, Ore., has developed a new pintype socket for Christmas tree lights that may be moved any place on the insulated wire [BW—Aug.28'48,p51]. . . .

We have manufactured a pintype socket evidently similar to that of On-A-Lite Corp. since 1928. . . .

As our pintype sockets have gained very wide acceptance in the electrical industry, which has absorbed many millions of them since their orginal conception, we are surprised to note that the idea is now considered new.

As a matter of fact, the idea was not entirely original with the Union Insulating Co., as a similar item was produced in England as early as 1925.

W. M. Parker, Jr.

TREASURER,
UNION INSULATING CO., INC.,
PARKERSBURG, W. VA.

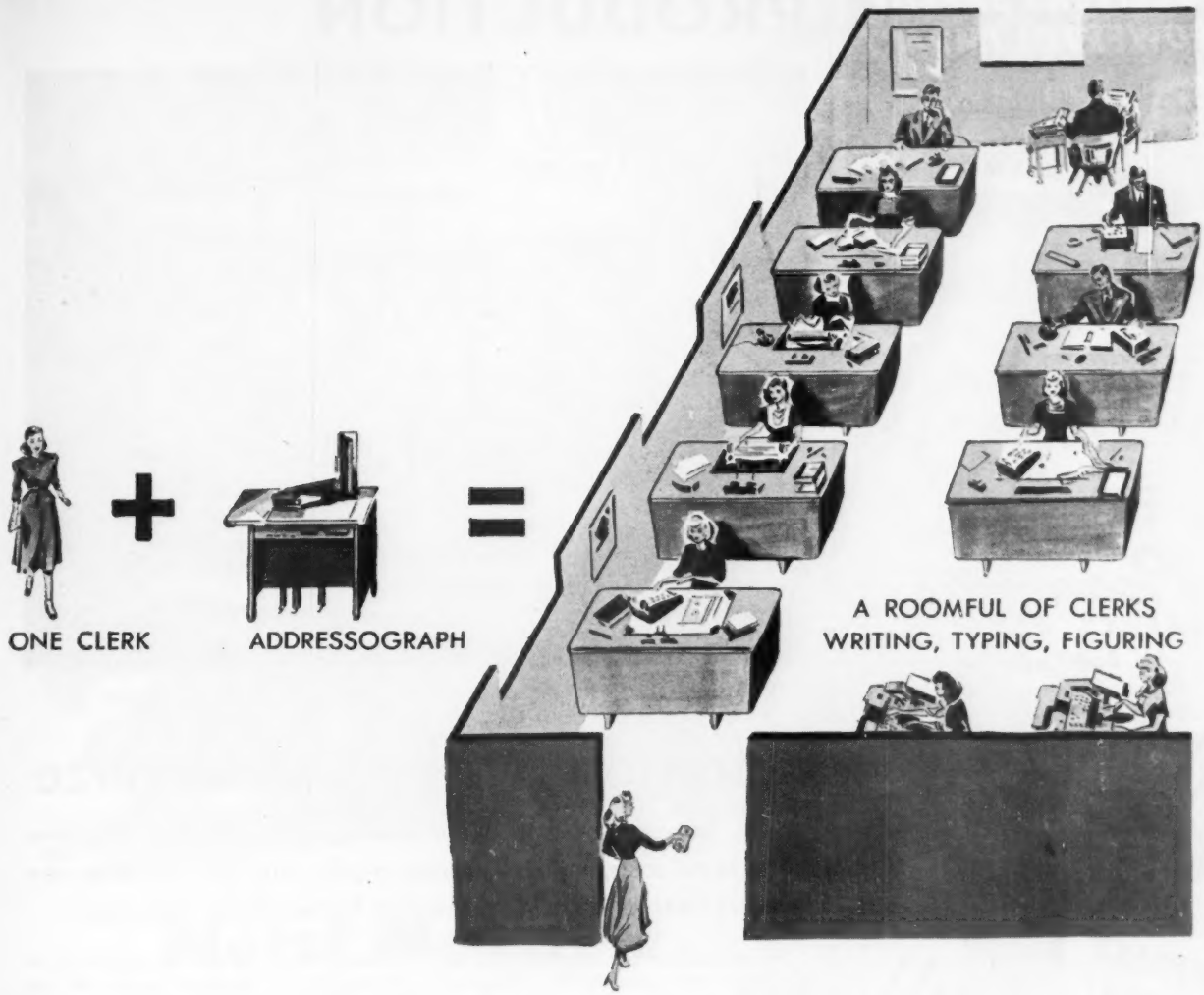
Right City, Wrong Company

Sirs:

An item in your labor section [BW—Aug.7'48,p92] says that the 3,500 workers at Chase Brass Co. in Bridgeport switched to the A.F.L. This is not true. It was the workers of Bridgeport Brass Co. at Bridgeport.

Harold B. Dow

BRIDGEPORT BRASS CO.,
BRIDGEPORT, CONN.



Savings *multiply* when you *add* Addressograph

WITH Addressograph equipment you step up employee productivity, stop errors, reduce overtime, and get better control of your business records.

Whether you have a small office or hundreds of clerical workers, your procedures involve repetitive writing of words and figures. You can speed this work and free clerical time for other tasks with Addressograph methods.

Addressograph writing is the fastest, most accurate method of putting words and figures on business forms. Chances are you are paying for Addressograph equipment whether you have it or not.

Why not get the latest information on this modern way of mechanizing and expediting your business record writing procedures? Write for your free copy of our new 20-page booklet, "The Principal Clerical Task of Business". *Addressograph-Multigraph Corporation, Cleveland 17, Ohio.*

Addressograph

TRADE-MARK REG U.S. PAT OFF

SIMPLIFIED BUSINESS METHODS

Addressograph and Multigraph are Reg. Trade Marks of Addressograph-Multigraph Corporation

DELIVERS SPEEDY POWERFUL IMPACT

without kickback to operator

This hard-hitting Keller Impact Wrench sets nuts to a desired torque without stalling shock to the operator. High speed at light loads combines with positive impacting blows for all assembly operations. Reversible. A 4¼-lb handful of power!

Pneumatic
IMPACT WRENCH
⅜" Bolt Capacity

NEWEST SIZE NOW AVAILABLE

⅝" Bolt Capacity

This new size Keller Impact Wrench has a capacity of ⅝" bolts. A powerful tool, yet its impacting mechanism is simple, direct . . . free from gears, springs, complicated devices. Reversible feature for disassembly operations. Built-in torque regulator.

KELLER TOOLS

Compression Riveters
Grinders
Drills
Screw Drivers & Nut Setters
Air Hammers
Air Motors & Special Tools

KELLER
Pneumatic
Tools

KELLER TOOL COMPANY
4809 Harbor Street — Grand Haven, Michigan

PRODUCTION

HOW MUCH HEAT LOSS through firebrick? Tests like this are being made as . . .

Refractory Makers Modernize

Industry looks to expanded research and plant improvements to cut costs, improve product quality, and help develop new types of heat- and chemical-resistant furnace-lining materials.

Mechanization was once the tool just of large, mass-production industries. Now it's reaching out into many lesser-known fields that are basic to big manufacturing.

• **Example**—A typical example is the refractory industry. This branch of manufacture—vital to the industries it serves—makes heat- and chemical-resistant structural materials for ovens, crucibles, and furnaces. The steel industry, the chemical industry, the glass industry couldn't get along without it.

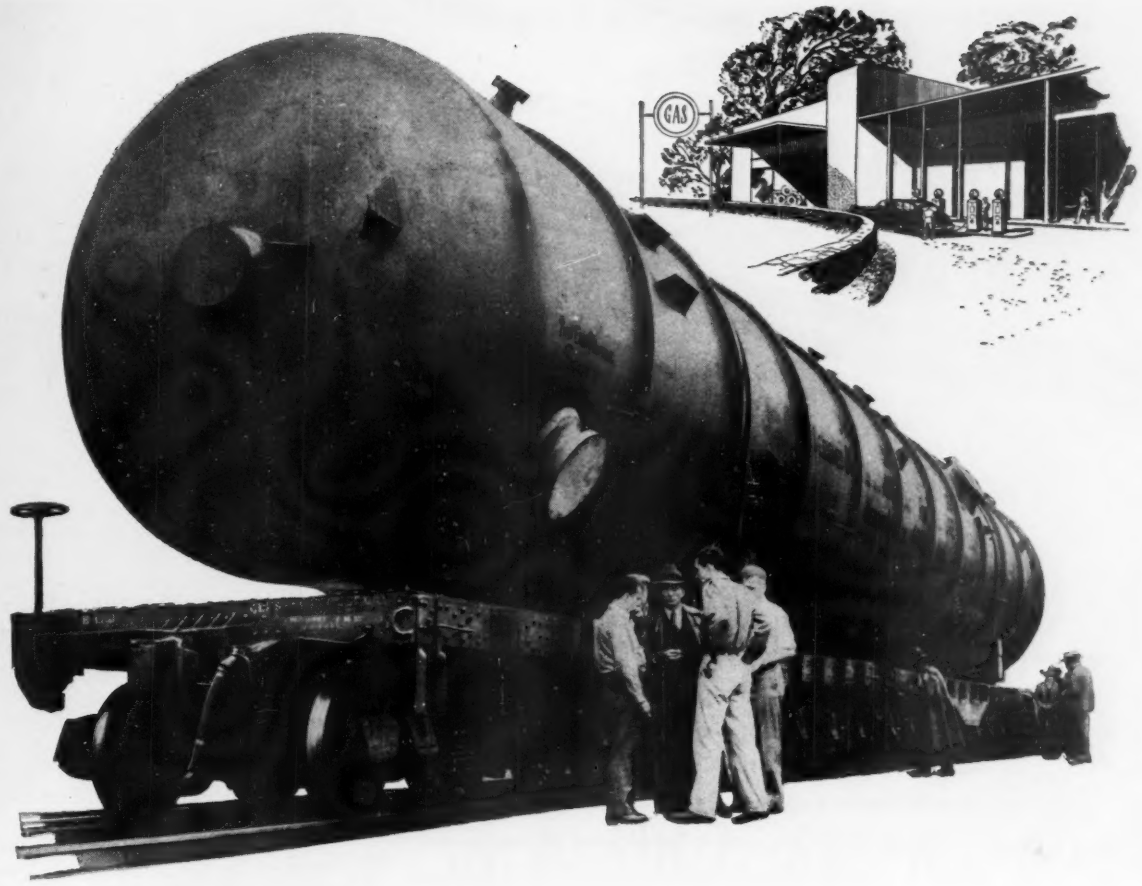
The refractory makers are mechanizing today, just like their customers. By last week, the latest and one of the most modern plants—Harbison-Walker's at Baltimore—was running at full clip. The plant has many new processing features; it's backed up by a big research effort.

• **Forms**—Refractories are available in several forms: structural brick; bonding mortar; granules that can be fused into place; "ramming" mixes (these are forced into a mold to form special shapes); and types suitable for spraying into place (this cuts installation costs).

Refractories are classified according to the kind of materials with which they have to come in contact. Thus, there are acid refractories (made of silica or fireclay); basic (made of magnesite or chromite); or neutral (made of carbon). Basic refractories, for example, are resistant to the basic slags formed in steelmaking. (Basic slags are high in lime, iron oxide, or alkalies.) Basic refractories can also be used in furnaces where resistance to heat, rather than to alkaline materials, is of prime importance. Their biggest market is the steel industry.

• **Raw Materials**—The most important basic refractory material is magnesia, which comes from natural magnesite-rock deposits, or is precipitated from sea water. Sea water has increased in importance as a source in the past few years. Magnesite refractories are used in the steel industry in open-hearth furnaces and in "soaking" pits (reheating ovens); in various nonferrous industries; and in the cement industry for lining kilns.

Chrome ore is another important raw material for basic refractories. All ores are imported: from Cuba, the Philippines, the U.S.S.R., Africa, Turkey, and Greece. More chrome ore is used in refractories than for all other purposes—including metallurgical uses—put together. Chrome refractories are used



Metal Monsters

—*that let you say, "Fill 'er up"*

When you stop at a service station and say, "Fill 'er up", it's quite possible that your gasoline has been processed through huge C-E pressure vessels like the bubble tower shown above. This giant tower, built in the St. Louis shops of Combustion Engineering, is 92 feet high, over 13 feet in diameter, and weighs 490,000 pounds.

This "metal monster" is by no means unique. C-E has built hundreds of big pressure vessels, many for the largest and most modern oil refineries, and many more of various shapes, sizes and metal composition for plants in the chemical and other process industries.

Combustion's contribution to the gas that flows into the tank of your car may seem to bear little relationship to C-E's major field of steam generation, yet the association is direct and logical. For the facilities and operations used in the manufacture of boilers are identical to those required for the fabrication of all types of pressure vessels—and Combustion Engineering's facilities for boiler manufacture are the finest available.

Whether the product is pressure vessels or boilers, industrial stokers or domestic water heaters—in many seemingly diverse fields, you will find the C-E flame symbolizing Combustion's primary purpose—the more efficient utilization of heat. 8-253

C-E

COMBUSTION ENGINEERING

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C-E Products include all types of Boilers Furnaces • Pulverized Fuel Systems Stokers • Superheaters • Economizers Air Heaters. Also, Pressure Vessels Chemical Recovery Equipment • Flash Drying Systems • Sewage Incineration Equipment • Domestic Water Heaters.

Forty years ago Fort Wayne corrugated shipping containers came from quarters rented from a wagon maker. That was in 1908, when this company started operations in cramped space in the Olds Wagon Works, using raw materials supplied by outside paper mills.

Today from its new, modern administrative building Fort Wayne operates four strategically located manufacturing plants, two productive paperboard mills...controls great pine forests, the very raw materials of container making and the processes by which they become quality kraftboard for Fort Wayne use. Widespread facilities integrated into a controlled modern operation, specialized experience gained in four creative decades, technical knowledge amassed in forty years of research, experiment, development....Responsible, guided growth has spanned the years since the wagon works. On its Fortieth anniversary, Fort Wayne is eminent in its field as a producer of completely controlled quality containers ...for the shippers of America.

CORRUGATED FIBRE BOXES
CORRUGATED PAPER PRODUCTS

Fort Wayne Corrugated Paper Company

General Offices:
Fort Wayne 1, Indiana

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Pittsburgh, Pennsylvania
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Mill:
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Affiliate:
Southern Paperboard Corporation
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Sales Offices:
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Dayton, Ohio • Cincinnati, Ohio • Muncie, Ind. • Indianapolis, Ind.
Detroit, Mich. • Newark, Ohio • Syracuse, N. Y.

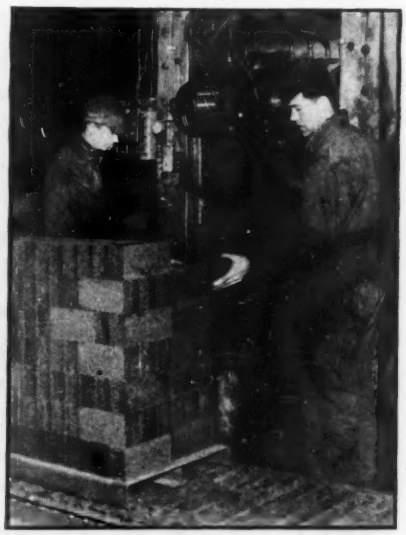
in the steel industry, and in the paper industry for the recovery of sodium salts.

• **Combined**—Most refractories contain both magnesite and chrome ore; the blend gives better properties than either material alone. For example, the combination refractories, encased in steel, can be used to simplify the construction of open-hearth furnaces; their greater strength permits suspended construction instead of the conventional arch type. That means easier and cheaper building and maintenance, greater resistance to high temperatures.

A third type of basic refractory is made from olivine, a mineral containing magnesium, iron, and silicon. It is found in North Carolina and Washington state. The olivine is blended with magnesia to produce a refractory material called forsterite. This is particularly suitable for furnaces in which dolomite (an important chemical raw material) must be burned and in glass-melting furnaces; the reason is that it doesn't react with dolomite and glass.

• **Two Methods**—Basic refractories are made in one of two ways: by high-firing or by chemical bonding. In the first method, the granular mixture is first shaped in a press, then subjected to extremely high oven temperatures (2,800 F-3,000 F). The temperature at which the bricks are fired determines the maximum temperature they will withstand in actual use.

About half the tonnage of basic refractories, though, is chemically bonded, not "burned." Developing the right adhesive was a real problem; most companies are still working on it. (The adhesive has to be as tough as the materials it holds together.) A chemical bond becomes even stronger when the brick is in use; the heat in the furnace improves the bond. Chemically bonded brick has an interesting characteristic:



CHEMICALLY BONDED brick is press-formed to shape

Secret of a split-second click!

SET your camera for the split-second timing you want. Flick the exposure lever. Click! That's it!

A tiny spring of music wire, as small as .006" in diameter, makes this possible. It momentarily stores the power of your flick, then releases this power, precisely controlled, to click the shutter. Chances are your own camera has a shutter spring much like one of those shown above. Chances are, too, that it is formed of wire from National-Standard's Worcester Wire Works Division, for here special music wire is produced continually for America's leading camera makers.

Camera makers are particular people. To give you equipment with lifetime reliability, to give you *good* pictures, even the wire for such tiny springs must be the finest of its kind . . . a job for experts. Imagine the painstaking care, the highly developed techniques necessary to produce this fine wire with its essential uniformity, high tensile strength, temper and perfect finish.

Music wire in its various types and sizes has an infinite number of uses, but is only one of many special kinds of wire produced at Worcester Wire Works. If *you* have a need for special-purpose wire, Worcester Wire Works specialists, as always, welcome the chance to show you what cooperation really means.

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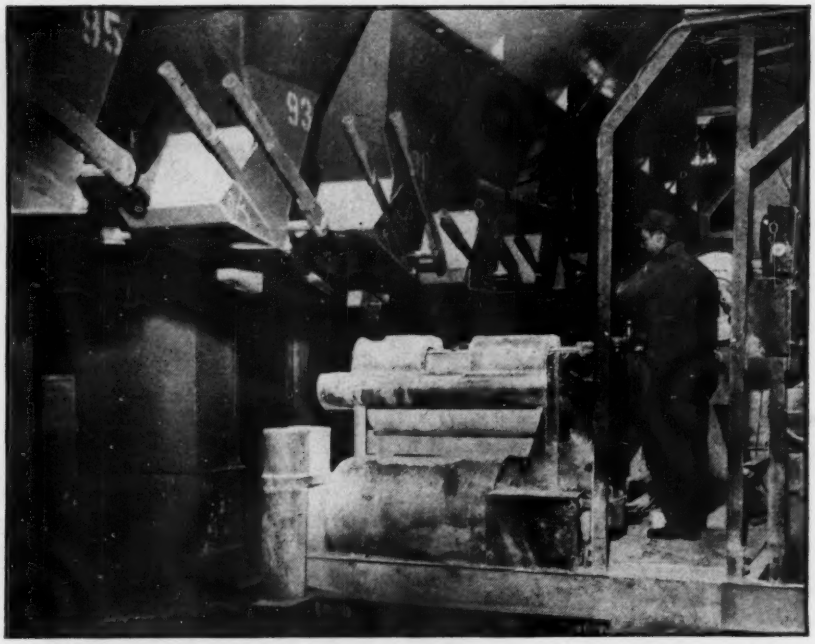
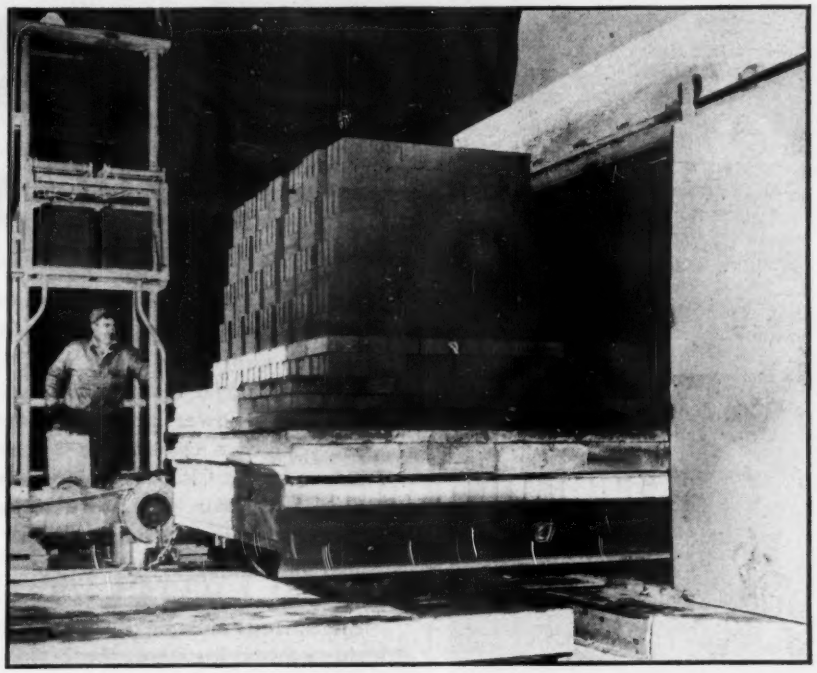


"LARRY CAR" collects a batch of ground materials to fill firebrick "recipe"



A CAR FULL of refractory brick leaves the 324-ft. continuous-tunnel kiln

It is highly resistant to thermal shock (quick change in temperature, up or down).

• **Other Types**—Although the basic refractories are most important to the furnace-lining business, other refractories also enter the picture. These include: (1) silica brick, from sand; (2) zircon refractories, developed for aluminum melting and metaphosphate fertilizer manufacture; (3) specialties like the high-alumina brick used to withstand extra-high temperatures, and the zirconia materials that can withstand extra-high thermal shock; and (4) bricks made of pure carbon, used extensively in blast furnaces.

• **Research**—A lot of public attention is paid these days to technical advances in the steel industry, and in other fields that use refractories. This progress depends a lot on progress in the refractory industry itself. As industrial furnace operations get more complex, new or better refractory materials are needed. They have to be more heat- and chemical-resistant than ever before, more uniform in quality, longer-lived, easier to

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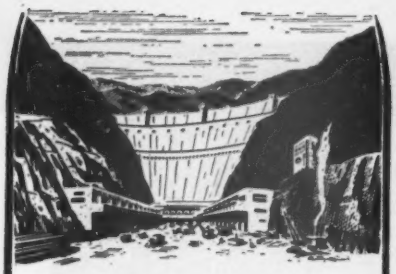

WHEN THE GREAT COLORADO WAS HARNESSED...

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In the pulp and paper, chemical, mining, petroleum, fishing, food and all the other industries, **"PACIFIC-WESTERN"** is again the primary supplier of gears and geared products designed and built for the specific needs of each industry.

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maintain, cheaper to buy, and to install.

The refractory industry itself is well aware of this. There's scarcely a company in the field that isn't spending money on research (for new or improved products) or on plant-mechanization (for better quality at lower cost).

• **Modernized Plant**—For instance, Harbison-Walker Refractories Co. spent $6¼-million in 1947 for plant additions and improvements. In the first three months of this year, it spent another $2.8-million. The biggest part of this outlay has gone into the Baltimore plant.

This plant is highly mechanized. The ores are unloaded onto an apron feeder that carries them to a crusher. A vibrating shakeout empties the cars. After crushing, the ore is stored in special compartments (30 types can be handled). The crushed ore is then fed automatically to grinders. Electrical and electronic controls are used in this feeding operation. The ground material is stored in bins. An operator, in a "larry car" that moves under the bins, weighs out the various materials according to the "recipe" for the mix (top picture, page 74).

• **Kilns**—After this, the mixture is made, carried to presses for shaping, then transported on metal pallets by fork truck to drying ovens, and finally to firing ovens. Continuous-tunnel kilns are used for the firing operation. Cars filled with the shaped bricks (lower picture, page 74) move slowly through a long tunnel. The heat increases gradually as the car moves into the kiln (a sudden jump to maximum heat would crack the bricks). There is a section of steady top heat; finally, a gradual cooling.

(Continuous-tunnel kilns are steadily replacing batch kilns throughout the industry. Their development has been sparked by Swindell-Dressler Corp. and Ferro Enamel Corp.'s Allied Engineering Division.)

Harbison-Walker's Baltimore plant also has a complete dust-control setup, with a separate system to collect each type of dust. This has two advantages: (1) Dust can be recovered and used; and (2) one refractory can't be contaminated with another—which helps control the quality of the finished product.

• **Others**—Harbison-Walker isn't the only company that's modernizing. General Refractories Co. is building a research laboratory in Baltimore; E. J. Lavino & Co. is putting in a new unit at Plymouth Meeting, Pa.; Babcock & Wilcox Co. has doubled its prewar refractory-production capacity.

Among the other major refractory makers busy with research and modernization: Gladding, McBean & Co., San Francisco; LaClede-Christy Clay Products Co., St. Louis; A. P. Green Fire Brick Co., Mexico, Mo.; North American Refractories Co., Cleveland.

New Rust Inhibitor For Pipelines

Sinclair Refining Co. is giving gasoline and kerosene a new one-shot "inoculation" to keep them from rusting its pipelines.

Rust inhibitors, as such, are nothing new to the industry. They're used in nearly all products pipelines today. But to be effective, these additives usually have to be injected several times along the flow route. Reason: They drop out at pumping stations and intermediate storage points—and they lose much of their effectiveness in distances over 75 mi.

Sinclair's additive, RD-119, is soluble in gasoline and in other light oil products. Thus, it will stay right with the oil wherever it goes. Chemically stable, RD-119 covers the inside of the pipelines with an invisible polymolecular layer that, the company says, prevents rust. The single injection needed can be made at the refinery—where handling and control are easy.

Even beyond the pipeline stage, there'll be benefits, Sinclair points out. Tank trucks and service station equipment will be protected. And the ultimate consumer will have less trouble from rust particles that may clog carburetors, filters, and diesel-engine injectors.

The company plans to license the use of the inhibitor later on.

FASTER LUBRICANT-MAKER

A new plant to make lime-soap greases by a continuous process will go into production early this fall at the Baltimore refinery of Esso Standard Oil Co.

The greases, widely used as lubricants, are made from lime, animal or vegetable fats, and oil. In conventional batch production, the lime and fat are cooked in a pressure kettle for 3½ hours to form a lime soap. Standard expects its continuous process to cut the time required for this step to 45 minutes.

Instead of the kettle, the new rapid-cooking system uses a heat exchanger and three tanks. The lime and fat are pumped and circulated through the system until lime soap is formed. The soap is then blended with mineral oil in a high-speed mixer. This revolves 3,600 times a minute to make the finished lime-soap grease. As a last step, the grease is forced out of a filling pipe, ready for packaging.

In addition to the time-saving, Esso Standard looks for more efficient blending in the new mixer and—as a result—a saving of about 10% in the amount of fat used. Close control throughout the production cycle can be expected to give a more uniform product.

The farmer's daughter and the traveling salesman

Bet you never heard this one. The two never met, but . . .

The farmer's daughter's hopes of going to State College were threatened by Bang's disease which had attacked her Dad's dairy herds, causing serious financial loss in farm income.

The salesman traveled for a drug firm, introducing a radical improvement of an established product recently developed by Lederle Laboratories which is proving successful in combating the dread cattle disease. (So the farmer's daughter goes to college.)

This delicate product, brucella abortus vaccine containing more than 300 billion live bacteria in each vial, sold in dated containers, had a shelf life of only 2 months . . . after that it was worthless. DPI, in cooperation with the manufacturer, recently installed high-vacuum equipment for dehydration. The complete dryness obtained has extended shelf life of the culture from 2 months to a year or more.

Results—a remedy more dependable in stability and efficiency, and less costly to manufacturer and consumer.

This is but one of scores of surprising ways high vacuum is serving in commercial applications. In the broad fields of foods, chemicals, metallurgy, electronics, optotechnics, cosmetics, plastics, high vacuum is used to improve products, decrease costs, or salvage waste materials into valuable commodities.

Do you know what high vacuum fractionating, dehydration or fusion may do for your processing or finished product? DPI's research men and engineers may be able to tell you. Write—

DISTILLATION PRODUCTS, INC.
739 RIDGE ROAD WEST, ROCHESTER 13, N. Y.

Manufacturers of Molecular Stills and High-Vacuum Equipment; Distillers of Oil-Soluble Vitamins and Other Concentrates for Science and Industry

---on cutting fuel bills in Half

During New England's severe winter of 1947-8, the J. C. Corrigan Company, Inc., of Dorchester, Mass., *cut its fuel bill nearly 50%* by installing a DRAVO *Counterflo* Heater. Coal for the previous winter season had cost this company between $1100.00 and $1200.00, whereas only $652.00 was spent for oil to fuel the DRAVO Heater during a similar period.

Besides fuel savings, the maintenance expense for the old heating system was practically eliminated because the DRAVO Heater operates automatically by thermostatic control. "Even more important" says J. C. Corrigan, President, ". . . part of our substantial increase in production this winter was due to the improved heating system."

Employees in the Corrigan plant manufacture custom-built conveying systems and need adequate warmth for efficient fitting and assembling. Previously, the plant was heated by a coal burning furnace using blowers and ductwork to distribute the warm air. Excessive roof heat losses in this 165' x 70' x 27' building prevented it from being comfortable. To heat "cold spots" that developed, eight pot-bellied stoves were installed. Maintenance of this old heating method required three hours labor every day. Coal and ashes had to be hauled through the heart of the busy plant. Even with the eight stoves to supplement the coal-fired furnace, heat was inadequate and employees spent valuable production time huddling around the stoves.

In November 1947, one DRAVO *Counterflo* Heater with an output capacity of 2,000,000 Btu was installed. No ductwork was needed. Only fuel and power lines had to be connected and a vent stack installed. Now the entire factory area is maintained at the proper degree of warmth for workers' comfort and efficient production.

During sub-zero weather last winter, the single DRAVO Heater delivered enough heat within 20 minutes after it was turned on to satisfy the thermostat's setting. Moreover, the DRAVO Heater is shut down to conserve fuel during non-working hours, whereas the coal furnace had to be fed over week-ends while the plant was not in operation to maintain some warmth for the Monday morning shift.

DRAVO *Counterflo* Heaters burn oil, gas or coal. Units burning non-solid fuels can be converted from one fuel to another very readily. Coal-fired heaters can be converted for burning gas or oil.

DRAVO CORPORATION, *Heating Section,* Dravo Bldg., Fifth and Liberty Avenues, Pittsburgh 22, Pa.

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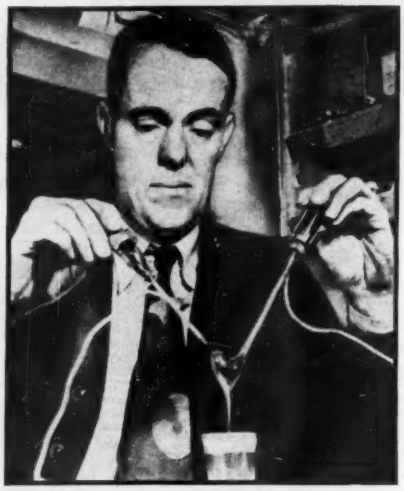
PICTURE REPORT



Current Makes Oil Solid

An idea hatched in a Denver home workshop may point the way to a whole new family of electro-mechanical inventions. The principle, patented by Willis M. Winslow, is this: A current of electricity passed through dirty oil will "freeze" the oil into a tough solid. Above, using a pair of electrified screwdrivers, Winslow picks up a lump of ordinary motor oil that has been mixed with cornstarch.

Cut Current: Oil Melts

When the current's off, the oil drips back into the glass. The effect of the electricity is to link the starch grains into millions of tough, fibrous chains. The principle is akin to that used in the magnetic clutch announced by the Bureau of Standards (BW—Apr.10'48,p72). But Winslow's devices take higher voltages, act faster. Possible applications: a non-grabbing automobile clutch (the oil will grip metal plates together); a valve without moving parts; an electric eye that needs no vacuum tubes.

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Lightweight—truly portable—it is carried wherever it is needed . .

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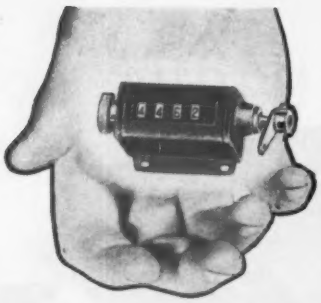

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For STROKE and ROTARY Application

This new Model "Y" Productimeter has been built to meet the insistent demand for a small, accurate, compact reset counter. It is designed particularly for application where high speed counting is involved.

It's tiny, but it's rugged . . . and precision built to give you years of service. The Model "Y" Productimeter is easily adaptable as an integral part of office machines, laboratory equipment, and various types of production machinery.

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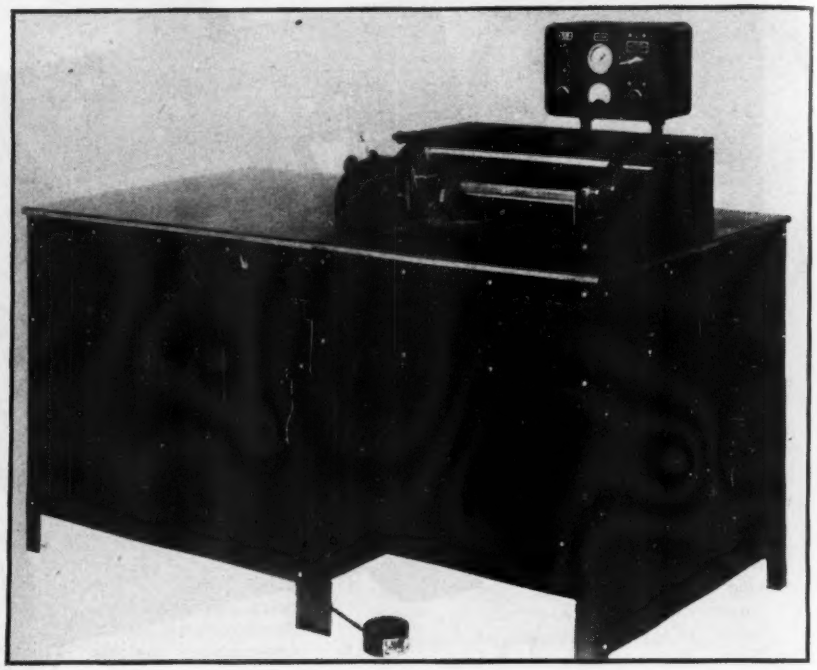

Metal Parts Crack-Spotter

If you use magnetic inspection methods, Magnaflux Corp.'s new Duovec units may speed up your checking operations. The units make it possible to inspect iron and steel parts for defects in any direction with one magnetizing operation and one visual check.

In magnetic inspection, magnetic forces uncover machining or grinding cracks at or near the surface. After the part is placed in a magnetic field, it is coated with iron filings or is dipped in a bath containing iron filings. If there is a crack in the part, tiny magnetic poles will form on each side of the break; the filings stick to the place where these poles are set up, make the defect visible.

Ordinarily, two magnetizing operations are required for complete inspection. To get proper adherence of the iron particles, the magnetizing force should cross the crack at right angles. Thus, for example, in magnetizing a cylindrical part, you would magnetize it first through its diameter and then through its length.

The Duovec units, however, combine these two steps into one operation. When the part is put between the heads of the unit it is magnetized in a circular field and at the same time is subjected to a longitudinal field of regularly changing strength. The resulting varying magnetizing field swings through the part at an angle well over 90 deg. The magnetizing forces thus cross all possible defects at right angles.

In the units the swing of the magnetic field can be adjusted from 0 deg. to 90 deg. or more by changing the proportionate relationship between the circular and longitudinal fields. Typical parts that can be inspected on the Duovec include: bolts, roller bearings, small gears, camshafts. Magnaflux is at 5900 Northwest Highway, Chicago 31.

• *Availability: three months.*

Circuit Checker

All the electrical testing jobs that have to be done on an automobile can be handled by a single instrument, the Fay-Dar. Built with two meters, it has testing prods made of copper. The device will give you a quick check on battery, volt regulator, starter switch and starter motor, cables, generator, lighting system circuits, and spark plugs. You don't need tools, don't have to bother with making disconnects. Net weight of the instrument: 4¼ lb. Fay Darling & Co., 331 E. 55th St., Kansas City 2, Mo., is the manufacturer.

• *Availability: three weeks.*

High-Heat Sealers

Two sealing compounds that stand up under temperatures as high as 2,800 F are in production at American Latex Products Corp.

The compounds, Stabond FR 8 and FR 10, come in various consistencies; they can be applied by trowel, brush, or extrusion gun. Some of their uses: as insulating material on electrical junction boxes, heat exchanger couplings, and as lagging (coverings) for steam

THE SWORD THAT PAVED THE WAY FOR modern steel

According to legend, a Damascus sword had an edge so keen it could cut a silk handkerchief in mid-air. Favorite weapon of the Saracens, these blades brought terror to the Crusaders and fame to the city from whence they came. In fashioning these blades, little did the ancient armorer realize that his repeated heating of the metal was largely responsible for the fabulous quality of the steel.

Not until hundreds of years later were the secrets of treating steel with heat thoroughly understood and adapted to industrial uses. Today, through heat treating, industry finds over 200,000 types of applications for this better steel. But the use of heat in making, fabricating, and treating steel develops many maintenance problems in the equipment used such as containers, supports or conveyors for the parts being heat treated. Heat greatly accelerates the rate of wear, both mechanically and chemically, for such equipment.

One of the aims of Brake Shoe's Electro-Alloys Division is to reduce the number of times a heat-punished part must be replaced. Its research has developed Thermalloy, a series of special high alloys that resist temperatures up to 2,200°F. It assures fewer shutdowns, lower operating costs, a more even flow of production.

Brake Shoe seeks to control the wear caused by heat. If you have a problem involving high temperatures, our metallurgists and engineers will be glad to work with you toward a satisfactory solution. Address your inquiry to:

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10 Divisions of American Brake Shoe Co. produce wear-resisting parts in 60 American and Canadian plants.

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Get Floors
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Faster . . .

TEAM UP Your Scrubber with a Cleanser that's *MADE* for It!

The greater speed of mechanical scrubbing requires the use of a cleanser that keeps pace with the speed of the machine. Cleansers designed for hand-scrubbing cannot be expected to give the fast cleaning action required for machine-scrubbing. In an attempt to get floors thoroughly clean, the operator of a scrubbing machine using a slow-acting cleanser may resort to prolonged brush action, but that needlessly piles up mileage on the machine, increases labor costs, and prematurely wears out the brushes.

To utilize the full cleaning capacity of your scrubbing machine—to get floors *film-free clean* in minimum time—choose a cleanser that's specially made for machine-scrubbing. *All Finnell Cleansers are.* And there's a type for every need, including *Setol*, the mineral oil solvent for cleaning oily wood floors, and *Finola, the Original Scouring Powder*, for heavy duty scrubbing of smooth, hard-surface floors.

The *Finnell Machine* illustrated above is a *Self-Propelled Scrubber-Vacuum* designed for use on large-area floors. This *Finnell* applies the cleanser, scrubs, rinses if required, and picks up. Cleans up to 8,750 sq. ft. per hour!

The *nearby Finnell man* is readily available to help train your maintenance operators in the proper use of *Finnell Equipment* and *Supplies.* For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 3809 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

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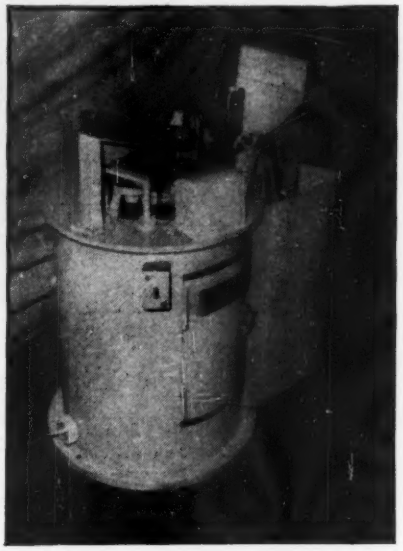
pipes and hot-air ducts where you need resistance to vibration as well as to heat.

Made from a plastic base, the compounds "set" at 80 F to form a hard protective sheath. This covering can be further strengthened by adding perforated glass cloth or a similar material at the time the sheath is formed. The manufacturer's address: 921 Venice Blvd., Los Angeles 15.

• *Availability: immediate.*



Automatic Packager

An automatic machine developed by Rollins Engine Co., Nashua, N. H., will be a time-saver in packaging screws, nails, small parts. The machine counts the screws, puts them in an envelope, then seals the package. With an average size wood screw, it will pack about 20,000 envelopes a day (four screws in each envelope).

The envelopes are placed in a chute and are mechanically fed to a rotating turret head. This turret head carries the envelopes to hopper units, waits while the right number of screws is dropped in. Then the turret moves to a gluing station. The envelope flaps are folded over and the package is passed between pressure rolls that seal the flap. The operation completed, the envelope drops out of a chute into a box.

By adding extra feeding units, you can feed different kinds of screws and nails into one envelope. The machine has a ½-h.p. motor, which works on 110 to 220 v. a.c. A small compressor to supply air to open the envelopes is available.

• *Availability: 10 weeks.*

Fast Flash

A high-intensity photolight for snapping fast-moving objects is a development of General Electric Co.'s Special

Products Division. With it, a photographer can catch objects at speeds of 2,700 ft. per sec. The light gives a blue-white flash lasting two microseconds (a microsecond is one-millionth of a second).

The unit consists of a three-electrode, inert-gas-filled tube; a fixed-focus parabolic reflector; and a power supply capacitor. It operates on a 115-v., single-phase lighting circuit. It weighs 25 lb.

The fundamental unit, without accessories, can be used to photograph continuously moving subjects like a stream of water. In this case there's no need to synchronize the movement of the object closely with the flash.

In filming action that occurs just once—the explosion of a bullet or the smashing of a plate glass—an amplifier has to be added to give precise synchronization of object and flash. This synchronization can be done in several ways. One way would be by using a phototube preamplifier and light source so that the object makes or breaks a light beam.

Possible research uses for the light: studying fluid flow, vibration, ballistics, high-speed rotational and linear motion. G. E.'s address: Schenectady 5, N. Y.

• *Availability: 5 months.*

P. S.

Pipe-fitting covers of Foamglas, for both hot and cold use, are made by Pittsburgh-Corning Corp., Pittsburgh. The fitting covers have been designed to supplement the company's line of Foamglas pipe insulation.

Low-cost photowasher, called Hydrojet, works with an ordinary dishpan. The device fits a conventional faucet, can be located above or below the sink. It maintains a constant—and adjustable—water level, works on as little as 12 psi. water pressure. Manufacturer: Hydrojet Corp., 300 W. Jefferson Ave., Trenton, Mich.

AIR EQUIPMENT TO HELP YOUR BUSINESS

The "CASH REGISTER VALUE" of Good Ventilation

Adequate ventilation is as much an asset to your business as the other comfort facilities! Hundreds of stores, plants, and offices have installed "Buffalo" Fans for the "cash register value" of fresh air: (1) more alert, healthy and productive workers, (2) more customers, who prefer to trade where the air is comfortable. These quiet-running "Buffalo" Fans are doing a low-cost job of it, too—moving maximum air on minimum power, with very little maintenance. Don't let stale air hurt *your* business—keep air continuously fresh with "Buffalo" Fans! Write us for full information.

"Buffalo"

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Available in a large number of sizes to fit your requirements, these popular fans use all "Buffalo"-made parts—giving quality control that always means better air service for your money. *Write for Bulletin 3339.*

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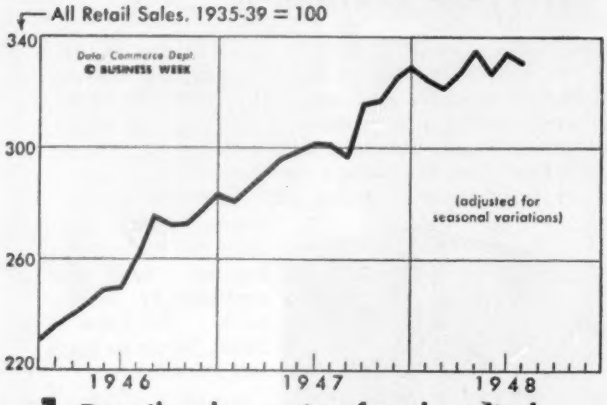
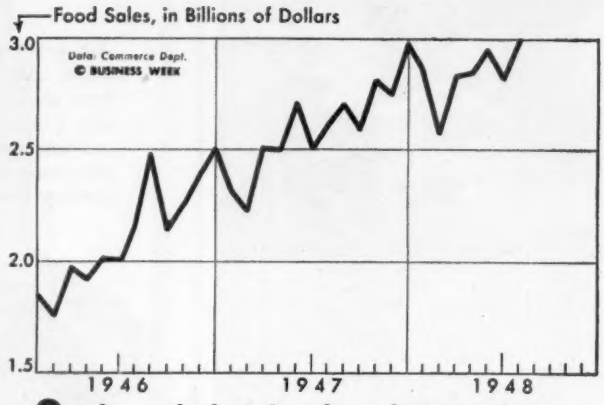
CUTTING COSTS IN EVERY BRANCH OF INDUSTRY

A Look at the Retail Picture as Winter S

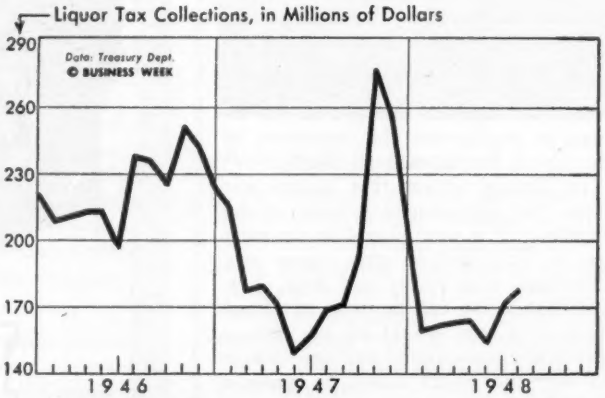


1 Retail sales poise for the climb that merchants expect this fall

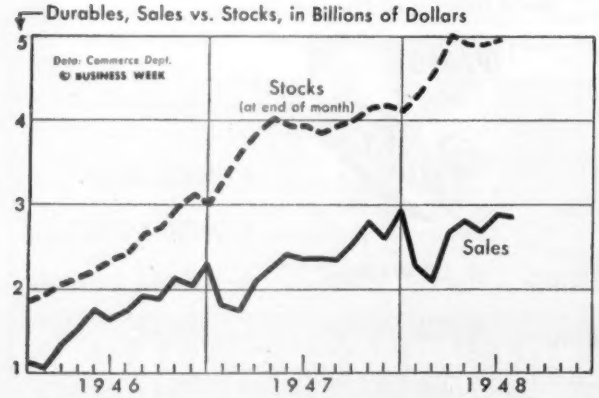


2 Though food sales claim a big chunk of consumer incomes . . .

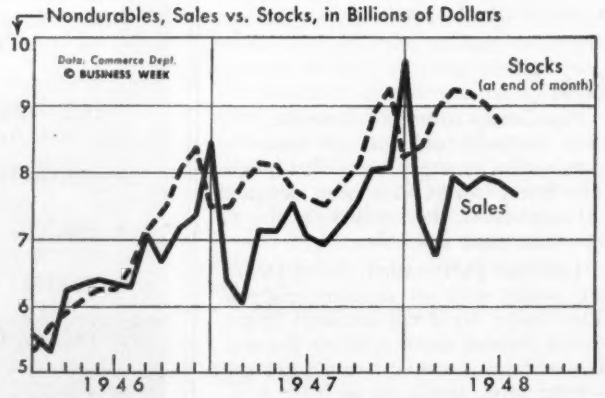
3 Most hard goods sales are still inching their way upward. But . . .



4 Tax collections show liquor sales and other luxury-taxed goods are off



5 Durable-goods retailers let their inventories rise, while . . .



6 Retailers of nondurable goods carefully keep stocks in line with sales

Season Nears

Sales will be good for rest of year despite growing consumer resistance to prices. Durable goods look the best.

For the nation's retailers, the next four months are traditionally the jackpot season. Thus, they hold the answer to the annual question: Can we beat last year's record figures?

• **Good, But**—This week, U. S. retail merchants took a look at the figures to date for 1948 and smiled hopefully. Sales will be good for the rest of the year, they think. But they point out a few intertwined factors which already are making it harder for them to achieve their goals:

INCREASING CONSUMER RESISTANCE to high prices. This has shown up in . . .

SELECTIVE PURCHASING. Consumers know exactly what they want and won't accept anything else, or they shop around plenty before buying.

TRADING DOWN. The tendency to spend "a few dollars more" for a fancier product is disappearing steadily.

• **Higher Figures**—Despite these new buyer characteristics, retailers are inclined to agree that they can beat last year's sales figures. Retail sales for the first seven months of 1948 totaled $72-billion; last year the figure for the same period was $64-billion. And sales didn't take so sharp a seasonal decline this summer as many retailers expected.

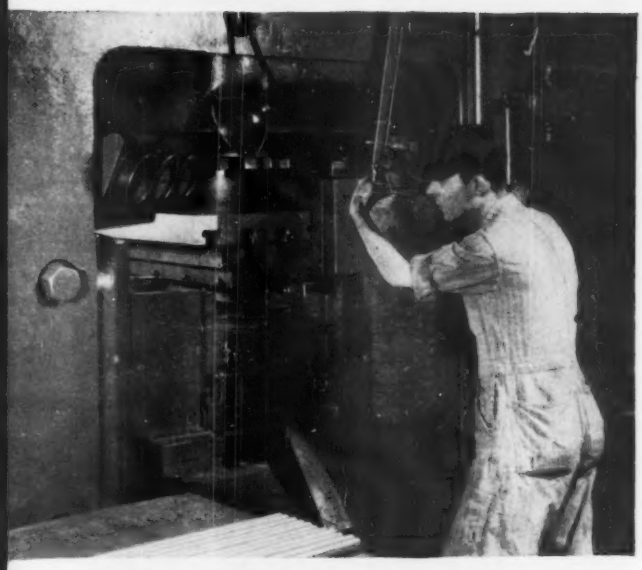
As usual, food retailers will get the biggest chunk of the consumer's dollar this fall. With food sales running at the rate of $3-billion a month in July, the grocers and butchers will sop up roughly one-third of all retail expenditures.

• **Durable Goods Spurt**—But increases in food spending haven't yet stopped other retailers from making sales gains. The most notable spurts have come in durable goods. Automobiles and parts lead the parade.

Two other hard-goods groups—building materials and hardware, and home-furnishings—have continued to make steady, if unspectacular, advances.

• **High Inventories**—Durable-goods retailers have shown their optimism in a concrete way—by letting their inventories grow. The value of durable-goods stocks at the end of July, 1947, topped July's sales by some $2.8-billion; this year, end-of-July inventories were more than $4-billion above the month's sales.

Many merchants feel that they have



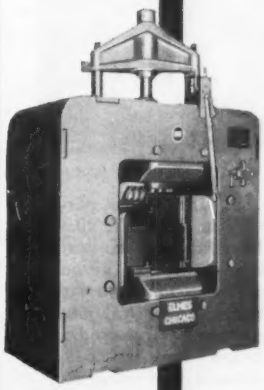
1000-ton Elmes Powdered Metal Press, forming bars from powdered tungsten. Photographed at Fansteel Metallurgical Corporation.

POWDER YOU SQUEEZE AND HEAT IS WORKING PRODUCTION MIRACLES

Powder Metallurgy is one of the *wonders* of our times, and it seems destined for a brilliant future. Metals with melting points *so high* that no crucible will hold them can be pulverized finer than flour and pressed into intricate forms. Metals which do not alloy in proportions desired—*if at all*—can be mixed as powders and made into strong, serviceable shapes by pressing and heating. Close tolerances, selective physical structures, and exact duplication in quantity —*without wastage or machining*—are routine and economical when the right equipment is used.

IT'S A JOB FOR AN ELMES PRESS

Hydraulic pressure, properly applied and accurately controlled, assures *uniform compacting* throughout. The Elmes press, illustrated—for example—has two slides, one above the work and the other beneath. These slides are hydraulically equalized for a definite travel ratio, *regardless* of resistance or pressure. Mold sides open and close hydraulically to facilitate removal of shapes.



Model 5685 Elmes Powdered Metal Press

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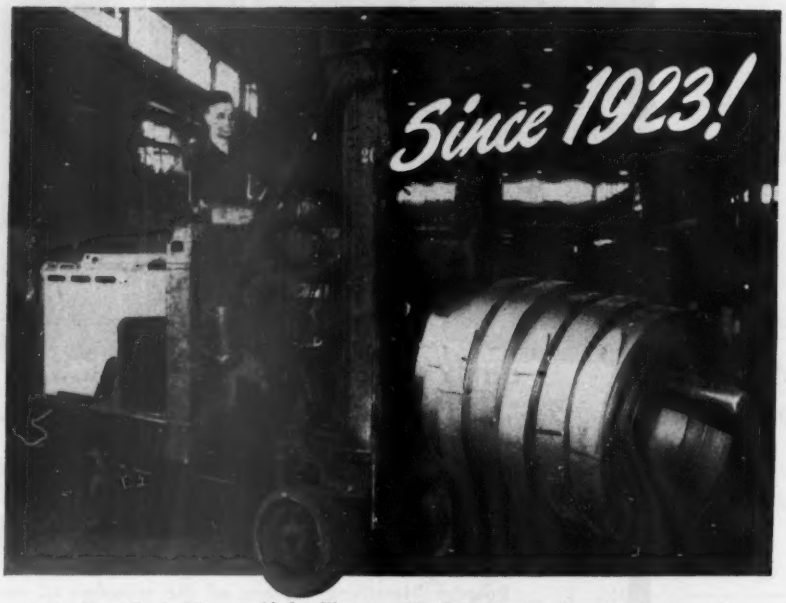
One BAKER TRUCK has handled OVER 4,000,000 TONS OF STEEL



Baker Ram Truck, 25 years old, handling 6600 lbs. of coiled strip—with operator who has been on the job as long as the truck.

Two Baker Ram Trucks taking steel from end of hot strip mill. Original truck in foreground. Loads exceed 6000 lbs.

On February 13, 1923, the first ram truck ever built for handling coiled strip went into service for a large steel mill in Ohio. Since then, this Baker Truck has been operating continuously—usually 24 hours per day. For 25 years it has been on the same job, taking coiled steel from the hot strip mill to storage. As of January 1, 1948, this truck had handled 4,080,297 tons of steel *and is still going strong!*

This truck, the forerunner of modern Fork, Ram and Hy-Lift Trucks, performed so well that five more like it were purchased during the next two years. These, too, have given continuous service—24 hours per day—and are still on the identical jobs for which they were purchased a quarter of a century ago. It is conservatively estimated that these six trucks have handled a total of over 16,000,000 tons of steel—averaging only about one day per month out of service for maintenance.

More recently this mill has purchased several modern Baker Ram trucks—like this 12,000 lb. model handling coils from end of welding line.

Let a Baker Material Handling Engineer demonstrate how records like this can be made in your plant.

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Baker INDUSTRIAL TRUCKS

a sound investment in hard-goods inventories, because basic materials—steel, for example—are in short supply. And since they may become even scarcer, inventory profits on heavy goods might be excellent in the future.

• **Nondurables Down**—The story is quite different in nondurable goods. Retailers, particularly the department stores, have been putting their houses in order since early in the year. Summer markdown sales have helped department stores clear out unwanted and unseasonable merchandise. Also, a late heat wave in many areas helped stores get rid of summer merchandise—although it knocked down total sales. Inventories are larger, but are geared closely to sales.

Retail grocery chains, also nondurable-goods merchants, likewise are keeping stocks close to sales.

• **Luxury Sales Off**—Liquor, toilet goods, jewelry, and furs have been the weakest contenders in the nondurable goods field. One big reason, of course, is that they all are victims of the government luxury tax.

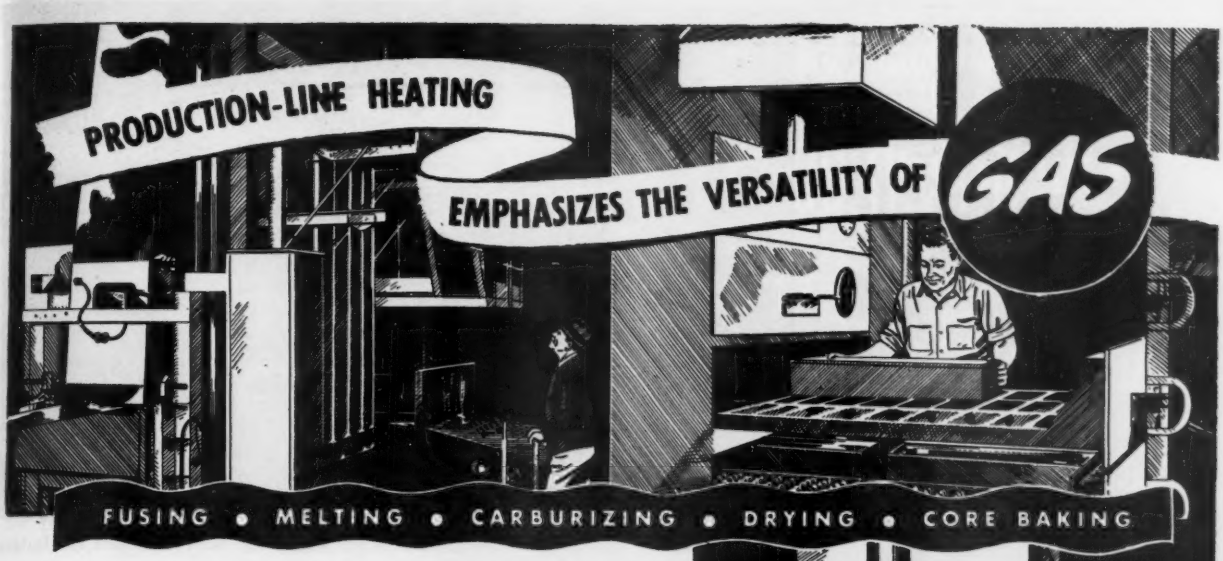
Since May, however, liquor sales have reached a moderately higher level than they showed for the same period last year. Fur retailers found August sales off considerably (BW—Sep.4'48,p78).

• **Prospects**—Retail sales prospects for the fourth quarter are moderately bright. By type of store, the chains are in a relatively better position than the independents. During the first six months of 1948, sales of all chain stores gained 13%; this was due in large part to heavy increases in sales by mail-order houses and other stores carrying durable goods. Department stores have a lesser gain to boast about—5% for the first half of 1948, although the eight-months total has risen to 8%.

Food chains will probably continue to beat last year's figures this fall; they picked up 16.2% over 1947 in the first six months of 1948. Independents, during the same period, gained only 4%. Growing consumer resistance to high food prices will continue to favor the chains. Both chains and independents, however, expect Thanksgiving and Christmas. their two yearly peaks, to keep sales ahead for the year.

• **Good and Bad**—Big department stores look for better sales in the last quarter, too. They report that hard goods are strong and should keep the pace during the fall. In soft goods, the situation is spotty. Hosiery and worsteds look good for autumn, but cottons weak.

Retailers base a pessimism for men's clothing sales on a traditional slackening when consumers are squeezed by high food prices. Sales of women's apparel, which are not affected as radically by the food price dilemma, will probably hold up well through the fall season.



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- **CLEANLINESS**—clean fuel facilitates good "shop housekeeping," promotes morale and good health among workers, eliminates many causes of rejects.

These are the characteristics of GAS you'll find useful in any industrial heating application—these are the reasons why you will find your local Gas Company Representative so helpful when you need heat for processing.

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Rubber chute-the-chutes handle cinders that slice steel

NEXT week's B.F.Goodrich advertisement appearing in this magazine tells about rubber lining that actually outwore steel lining more than 20 to 1! Look for this interesting industrial case history of product improvement on page 1 of the September 25 issue.

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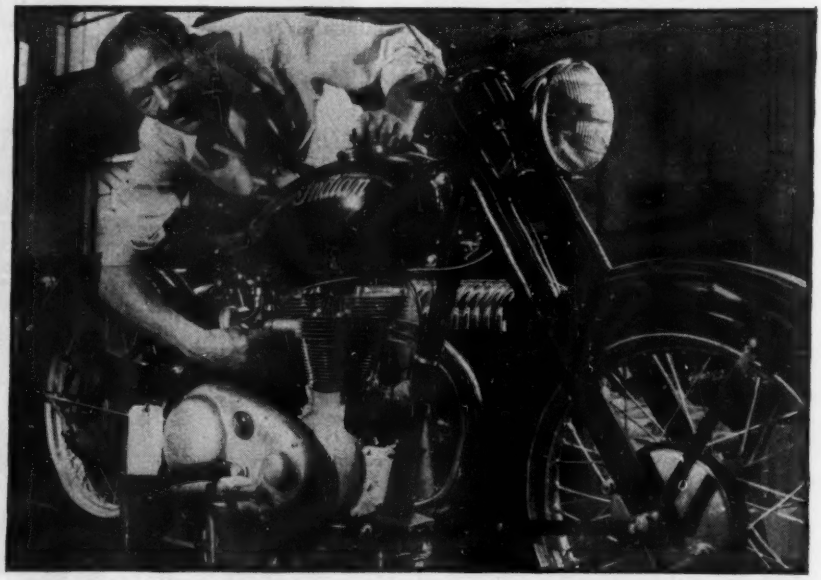
A sturdy Anchor Chain Link Fence gives you day and night protection against trespassers, snoopers, agitators and troublemakers of every kind. Makes your outdoor space safe for storing materials and supplies. Efficiently controls traffic in and out of your plant. Write today for our illustrated catalog, describing exclusive features like *Deep-Driven Anchors* which hold fence erect and in line. Address: ANCHOR POST FENCE DIVISION, Anchor Post Products, Inc., 6670 Eastern Ave., Baltimore 24, Md.

Anchor Fence
Nationwide Sales and Erecting Service

A NEW PLANT on the outskirts of Springfield, Mass., has been equipped by Indian Motorcycle Co. with up-to-date assembly lines, to turn out . . .



A NEW, LIGHT MOTORCYCLE that can be handled by almost anyone. This one—the Scout—is typical of the cycles that have brought about a . . .

Motorcycle Renaissance

Harley-Davidson and Indian caught on late to the light, European-type motorcycle. Now that they have, both companies are out to promote a market that's bigger than they ever dared dream.

The light, sleek motorbikes of Europe have overturned the U. S. motorcycle industry.

Not that the familiar U. S. motorcycle—big, powerful, noisy—is on its way out. You'll still see plenty of new ones roaring down the nation's highways. But you're also going to see a lot more small, economical motorcycles patterned after British and Continental types. Chances are that eventually the light bikes will outnumber the big bone-crushers.

• **New Market**—Light models are now being made by the two domestic manufacturers of motorcycles: Harley-Davidson Motor Co., of Milwaukee; and Indian Motorcycle Co., of Springfield, Mass. They both see a good potential market for the light bike and they are promoting it for all it's worth.

The big, prewar motorcycle had a

limited market. Policemen used them because they had to; dyed-in-the-wool fans, because they liked their power (32 to 45 hp.) and speed (75 to 100 mph.). Today, the light machines are tapping a whole new market. They are less than half as heavy as the large ones; won't break riders' legs when they topple over; are economical and clean to run; cost less; don't make much noise. In short, the motorcycle makers are aiming at a more general market. Meantime, some people are turning to motorcycles because they can't afford to buy cars.

• **Big Output**—Production figures show how seriously the two U. S. manufacturers are taking the new market. Harley-Davidson began making a 170-lb., one-cylinder model ($325 f.o.b. Milwaukee) last November; this year it will turn out some 10,000 of them as against 20,000 heavyweights. In 1949 it will hit top production stride with a total of 40,500 units, 17,500 of them lightweights. Indian is plunging even more deeply into production of light models. It will turn out 25,000 lightweights this year and about 5,000 redesigned heavies. (Last year its total output was 11,000 heavy Chiefs.) And within a few years it hopes to hit a total production of 100,000 motorcycles annually.

• **Amiable Competition**—It was the foreign manufacturers who taught this important marketing lesson to Harley-Davidson and Indian.

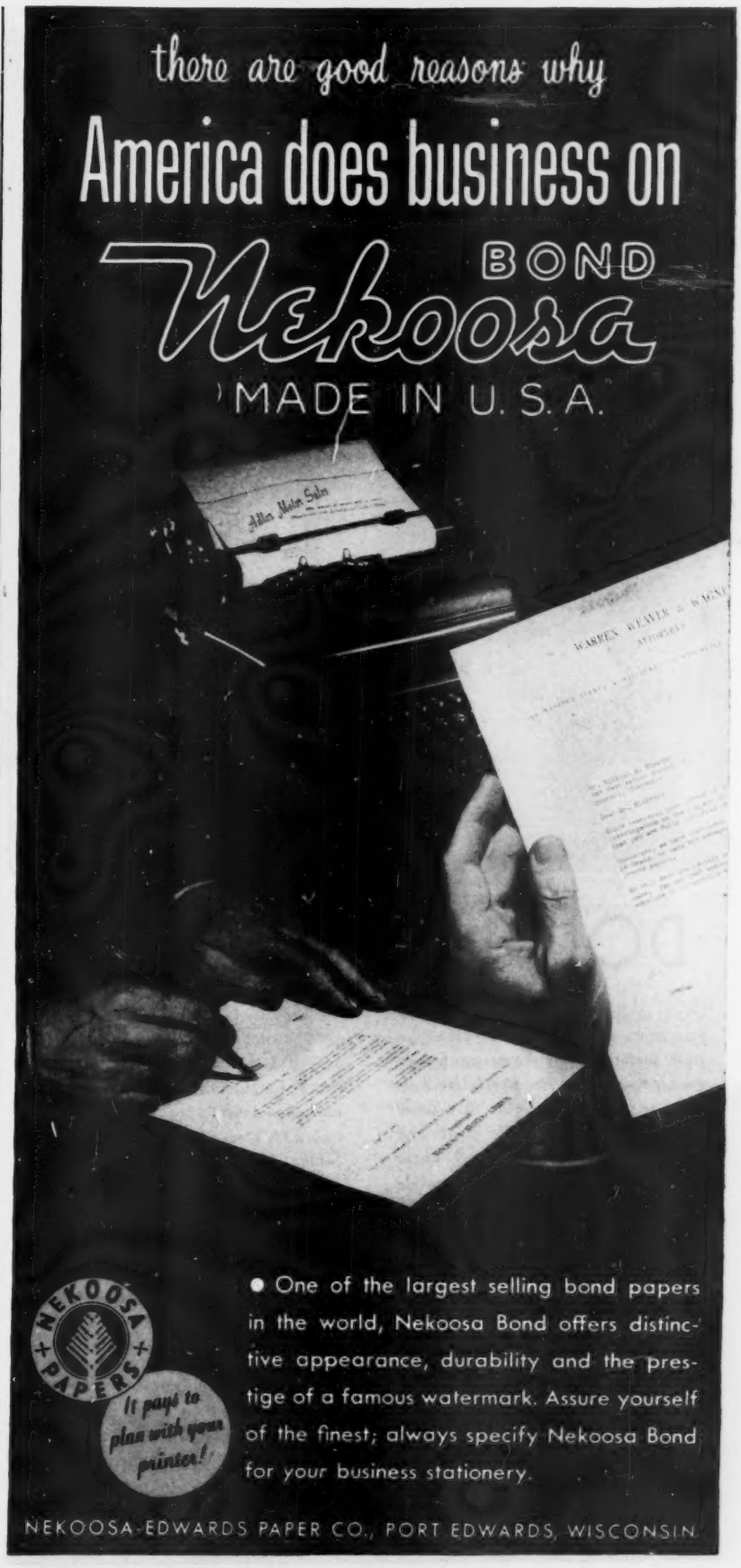
Before the war the two companies had an easy, somnolent time of it. Protective tariffs of 40% to 60% kept foreign competition out, and the pair conducted an easy-going rivalry to see which could sell the most cycles without spending money on model changes. Harley-Davidson kept a slight sales edge, but in any case neither company worried much—they had outlasted some 100 or so starters in the field.

Even so, the size of the melon shared by the two was shrinking. In Massachusetts, for instance, there were 15,143 motorcycles registered in the peak year of 1920. In 1940 there were 970, though the number has climbed since.

• **Foreign Competition**—After the war the tariff on motorcycles was cut to 10%. The impact was dramatic: In California, for instance, British motorbikes are now outselling both Indian and Harley-Davidson together. A little research showed that in 1938, as a sample year, the world market was about 400,000 motorcycles, nearly all in the medium or light class. The heavies had a mere 3% of the market.

These discoveries galvanized the industry. Harley-Davidson bought and equipped a war plant last year, doubling its productive facilities. Indian's response was no less decisive.

• **Ups and Downs**—The Indian trademark is an old one, dating back to 1901. But the present Indian Motorcycle Co.'s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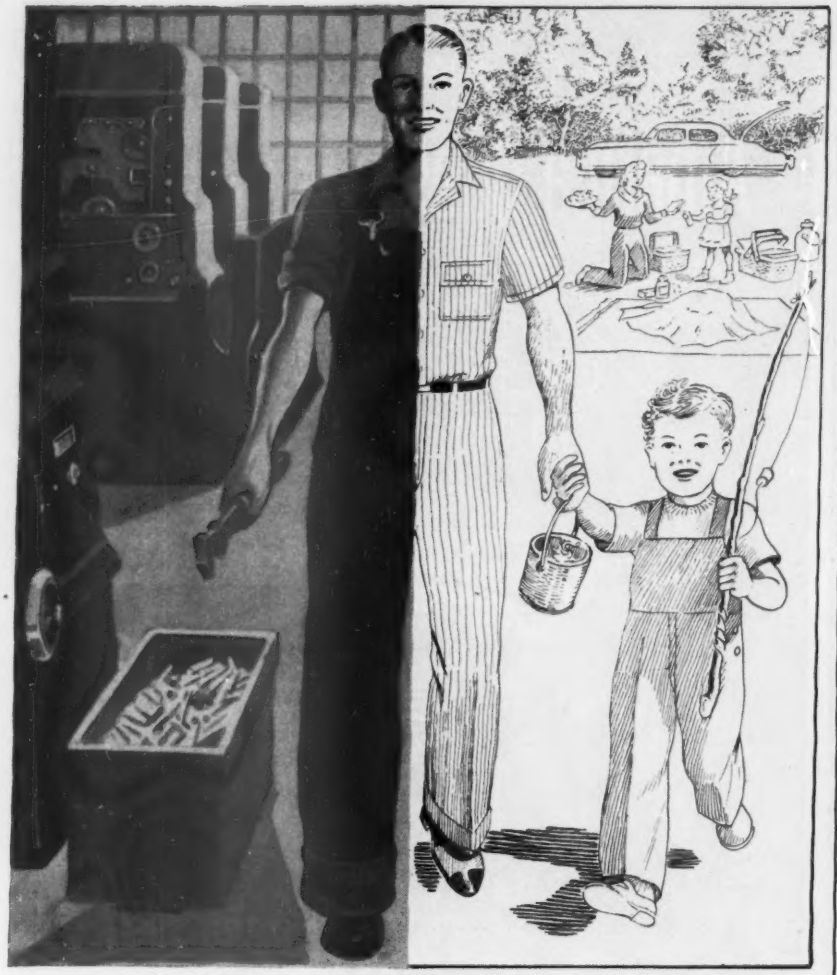


DOUBLE EXPOSURE

Down in North Carolina, pleasant leisure hours are an important part of the work picture. A few hours travel over good roads, *after* his week's work is done, will take the worker to massive mountains with free scenic picnic and camp sites . . . or to the coast, where 300 miles of sounds and inlets provide every variety of boating, fishing, and surf fun.

Any day in the week, almost in his own back yard, he will have access to field, woodland, creek or river . . . for most North Carolina industry is located in small towns and villages. To this wholesome environment and the happy balance it gives between work and play, North Carolinians owe many of the homespun qualities that have made their record for steady work the *finest in the South.*

Let our industrial engineers supply information about North Carolina, where workers . . . over 99% native born . . . welcome new industries and MAKE THEM GO. Write Division MI-26, Department of Conservation and Development, Raleigh, North Carolina.

North Carolina

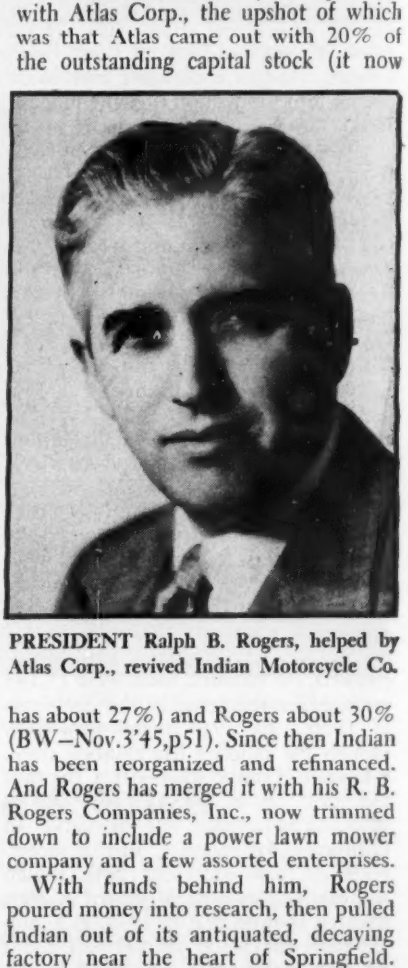
CONDITIONED BY NATURE FOR INDUSTRIAL PROFIT

MOUNTAIN PIEDMONT COASTAL

history has been spotty. Once prosperous, Indian had tough sledding throughout most of the 1930's, was needled by the war, slipped back into the red by 1944. A number of its best workers began leaving to form the Torque Mfg. Co. in Connecticut.

Indian's rejuvenation was due to Ralph B. Rogers, an energetic 39-year-old New Englander. Rogers, as head of the Rogers group of industries, has been board chairman or director of a string of companies straddling a number of fields. Among other things, he also held the East Coast distributorship for Kaiser-Frazer.

• **Rogers and Atlas Corp.**—Rogers bought out Torque during the war, then moved into Indian in 1945 when he heard the company was for sale. He took over Indian in a joint operation with Atlas Corp., the upshot of which was that Atlas came out with 20% of the outstanding capital stock (it now has about 27%) and Rogers about 30% (BW—Nov.3'45,p51). Since then Indian has been reorganized and refinanced. And Rogers has merged it with his R. B. Rogers Companies, Inc., now trimmed down to include a power lawn mower company and a few assorted enterprises.



PRESIDENT Ralph B. Rogers, helped by Atlas Corp., revived Indian Motorcycle Co.

With funds behind him, Rogers poured money into research, then pulled Indian out of its antiquated, decaying factory near the heart of Springfield. In June of this year Indian moved into its new plant on the outskirts of town. This was a plant built for Indian by the government during World War I, but never used by Indian due to the collapse of its earlier expansion plans.

• **Highly Mechanized**—Here Indian started from scratch. It modernized the motorcycle business with a mechanized assembly line—bird-cage conveyors for engines, modern paint drying ovens, and

the like. New jigs and dies cost $1-million. It took 79 man-hours to produce a Chief in the old plant, 25 man-hours to produce an Arrow in the new.

On July 7 the first lightweight Indians rolled off the production lines. Since then 2,000 have been turned out. The company is fast approaching its goal of more than 100 cycles a day.

• **New Models**—The new Indian Arrow weighs 240 lb., as against the old Chief's 600-odd. It's a single-cylinder cycle, costs $575 (f.o.b. Springfield). The Scout is a 275-lb., twin-cylinder model, costs $775 (f.o.b.). Indian also imports a very light Czech motorbike with a displacement of 7 cu. in. (About the same size as Harley-Davidson's Model 125.)

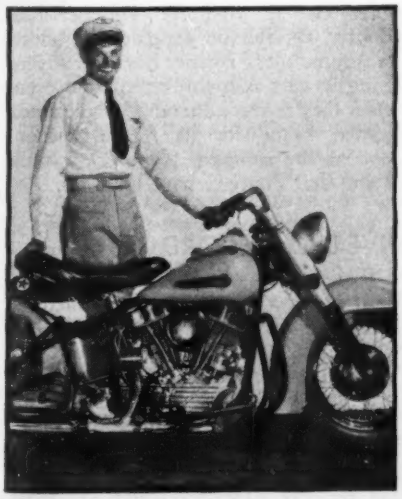
The Chief is temporarily out of production. When it comes back in, it will have been redesigned primarily for police use. And it will embody many of the lessons Indian has learned from its lighter cycles. It will be smaller than the old Chief.

• **Merchandising**—Indian is putting a heavyweight promotional and merchandising campaign behind its lightweight bikes. The advertising campaign alone will cost $500,000.

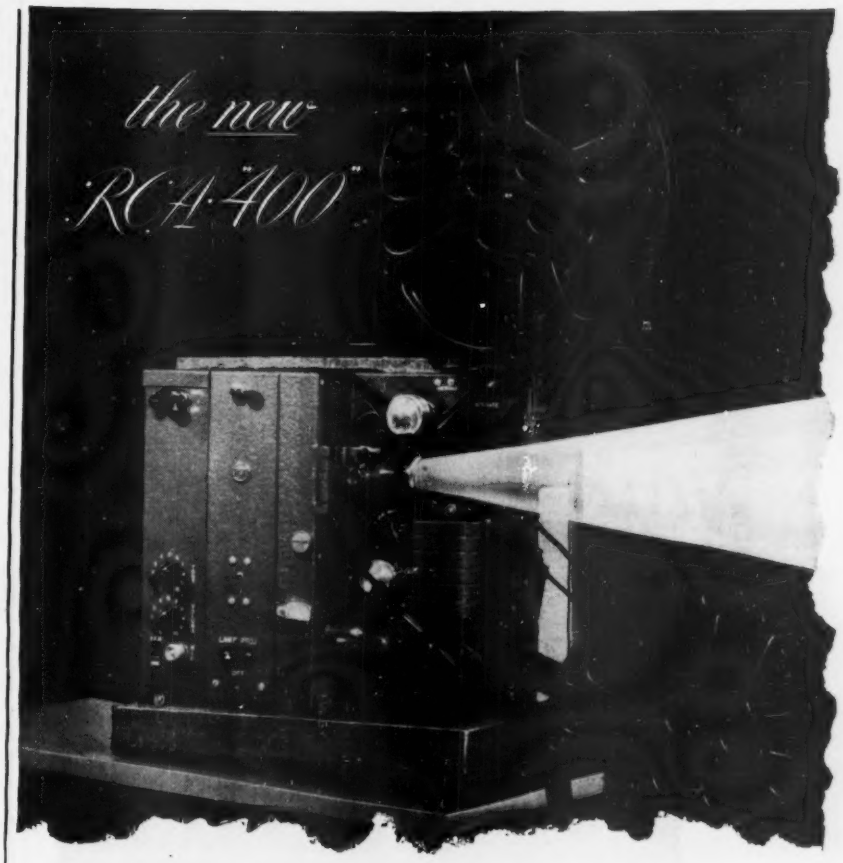
"Our problem," says Rogers, "is one of marketing rather than production. We know we have the motorcycle the public will like. . . . All we have to do is to convince it that the motorcycle is no longer merely a workhorse, but a mode of transportation to be enjoyed in comfort."

Indian is putting a good deal of effort into expanding its dealerships. Prewar it had 600, today it has about 1,000, and eventually it will have 2,500. Its dealers come off pretty well: Besides a profit margin of 25%, they are allowed various markups for handling and shipping charges. They do a good business, too, with motorcycle accessories.

Indian, incidentally, has its eye on the export market, too.



THE HYDRA-GLIDE is Harley-Davidson's sleek 1949 entry in the heavy field



A completely new standard of 16mm performance

• Thousands of businesses, schools, churches, clubs and homes, from coast to coast, are enjoying today a new kind of 16mm performance. The RCA "400," the finest 16mm projector RCA has ever built, is revealing what professional quality performance really means.

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Never before have you seen 16mm black-and-white or color screenings so brilliant, so rich in contrast and definition. Pictures are clear and steady. Performance is finer in every way.

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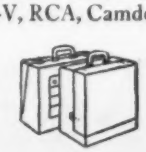
Words cannot tell the complete story. You must *see* and *hear* the RCA "400." Compare it . . . judge it! Before you buy any projector, make a *proof-test* with your own 16mm sound films. For descriptive brochure and name of nearest dealer—write: Sound and Visual Products, Dept. 16 F-V, RCA, Camden, N. J.

first in sound . . . finest in projection



SOUND AND VISUAL PRODUCTS
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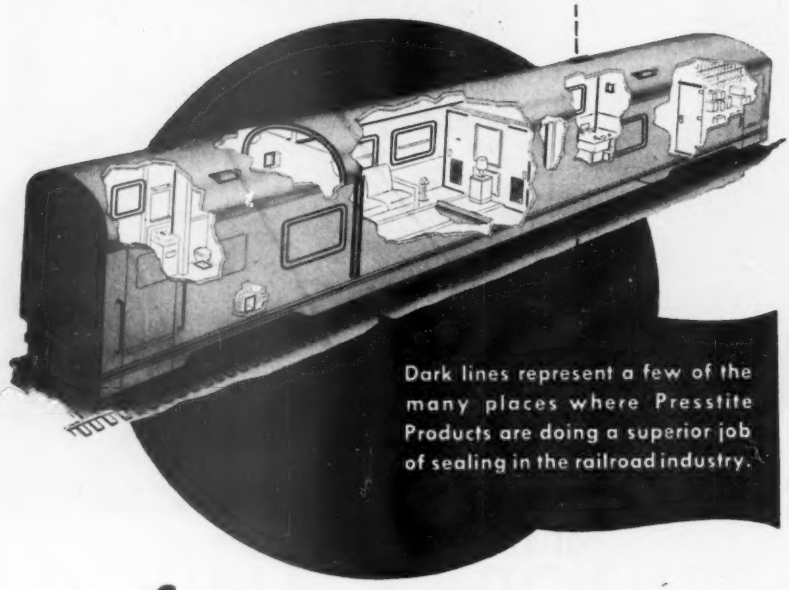
The Railroad Industry Depends on PRESSTITE for Sealing Out Moisture, Air, Dirt



Dark lines represent a few of the many places where Presstite Products are doing a superior job of sealing in the railroad industry.

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Engines For Sale

Buick finds steel for them is more plentiful than steel for car bodies. So it's selling spares for older cars.

Making and selling a product isn't too hard when you've got the materials and the market. But when one of the components of the finished product is scarce, you run into a snag. Looking for a way out, you may develop a product to sell that you didn't really expect to merchandise.

• **Acting on Necessity**—Buick Division of General Motors Corp. found itself in that position at the end of the war. Steel for making motors, Buick found, was available in larger quantities than sheet steel for bodies. So now the company is in the midst of a campaign to make and sell replacement engines for its older models.

Actually, Buick made a few engines, with government permission, before V-J Day. The war's end—plus the subsequent unbalanced steel situation—made the company decide to go into spare engines in a big way.

• **Full-Fledged Drive**—Since that time Buick has put a lot of advertising steam behind the replacement engine drive. The company now offers engines for all its cars of 1937 vintage or later.

The campaign has another purpose, too: to promote the use of the valve-in-head powerplant—the regular Buick engine—for general utility purposes. This approach, says Buick, has paid off especially in the Southwest. Typical uses for the engines: powerplants for irrigation and oil well pumps; general-service power and pumping for boats, barges, hoist machinery, dredges, and other equipment.

• **Pontiac's Approach**—Incidentally, another G. M. division, Pontiac, has adopted an oblique approach to boost its automobiles. Pontiac has been advertising its cars as highly acceptable even when they're secondhand. A typical ad, headed "Fine for its second owner, too!" is the company's indirect way of saying that Pontiacs have long life.

FIVE-DAY RECORD CUT

Radio Corp. of America this week went in for a five-day stint of "factory-sponsored" markdowns. Retail prices of 300 phonograph records made by RCA's Victor Division were cut roughly 50%.

Dealers could pick 100 titles out of a list of 300 "cut-out" records—disks that RCA is discontinuing. The records are all 10-in. Black Seals, which usually retail for 75¢. Dealers could sell their 100 titles at 35¢ each, or three for a

dollar, during the five days. Then prices went back to 75¢.

The object, said RCA, was to clear out stocks following the usual summer slump in record sales. The dip this summer was the deepest since the war—though this season's showing was still pretty rosy compared with prewar summers.

Another possible purpose: to distract attention from Columbia's promotion of its new long-playing record (BW—Jun.26'48,p66).

To sweeten the deal for the dealers—who took the dollars-and-cents markdowns—RCA allowed them to buy extra copies of the records at 21¢. They can sell these after the markdown period for the regular 75¢.

MARKETING BRIEFS

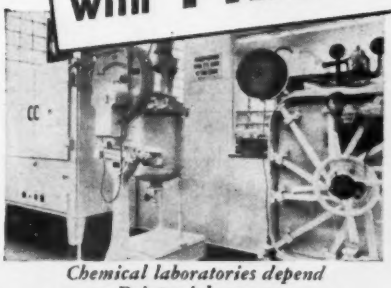
IN A BIG TRADE-MARK SUIT, Campbell Soup Co. and Carnation Co. lost the first round last week in Philadelphia's U. S. District Court. The winner was Armour & Co. Judge J. Cullen Ganey ruled that anyone can use a red and white (or a white and red) label without violating Campbell's or Carnation's trademark rights. Armour uses the colors on labels for its canned meat products.

BIG FARM COOPERATIVES did a $7.1-billion business last year. This was 16% more than the year before. Farm products marketed totaled $5.6-billion; supplies purchased came to $1.5 billion. Some of the products marketed: cotton, dairy products, fruits and vegetables, grains, beans, rice, live stock, nuts, poultry and eggs, tobacco, wool. Co-op membership gained, too—up 400,000 to 5.4-million.

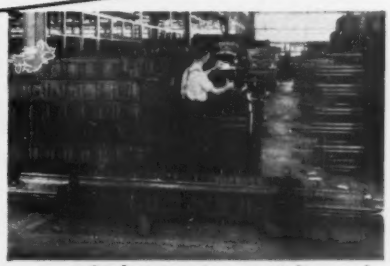
NEW AUTOMATIC WASHING MACHINE will be added to Crosley's appliance line if current negotiations with F. L. Jacobs Co. (Launderall) go through. The Crosley Division of Avco Mfg. Corp. already distributes a nonautomatic washer, made for it by Alliance Mfg. Co.

ORDER BACKLOGS for industrial purchases have not increased since June, 1948, according to the National Assn. of Purchasing Agents. The leveling off has taken place despite more intensive and aggressive sales efforts. Inventory reductions are also reported by many purchasing agents, says N.A.P.A. Main reasons are high prices and greater availability of many non-critical items. Included in the list of commodities that members of N.A.P.A. reported to be in easier supply: coal; containers; fuel oil; gasoline; air-dried lumber; paper; paraffin wax; soda ash.

STOP ERRORS NOW with PRINTWEIGH Scales



Chemical laboratories depend on Printweigh accuracy.



Costly errors in materials eliminated by Printweigh.

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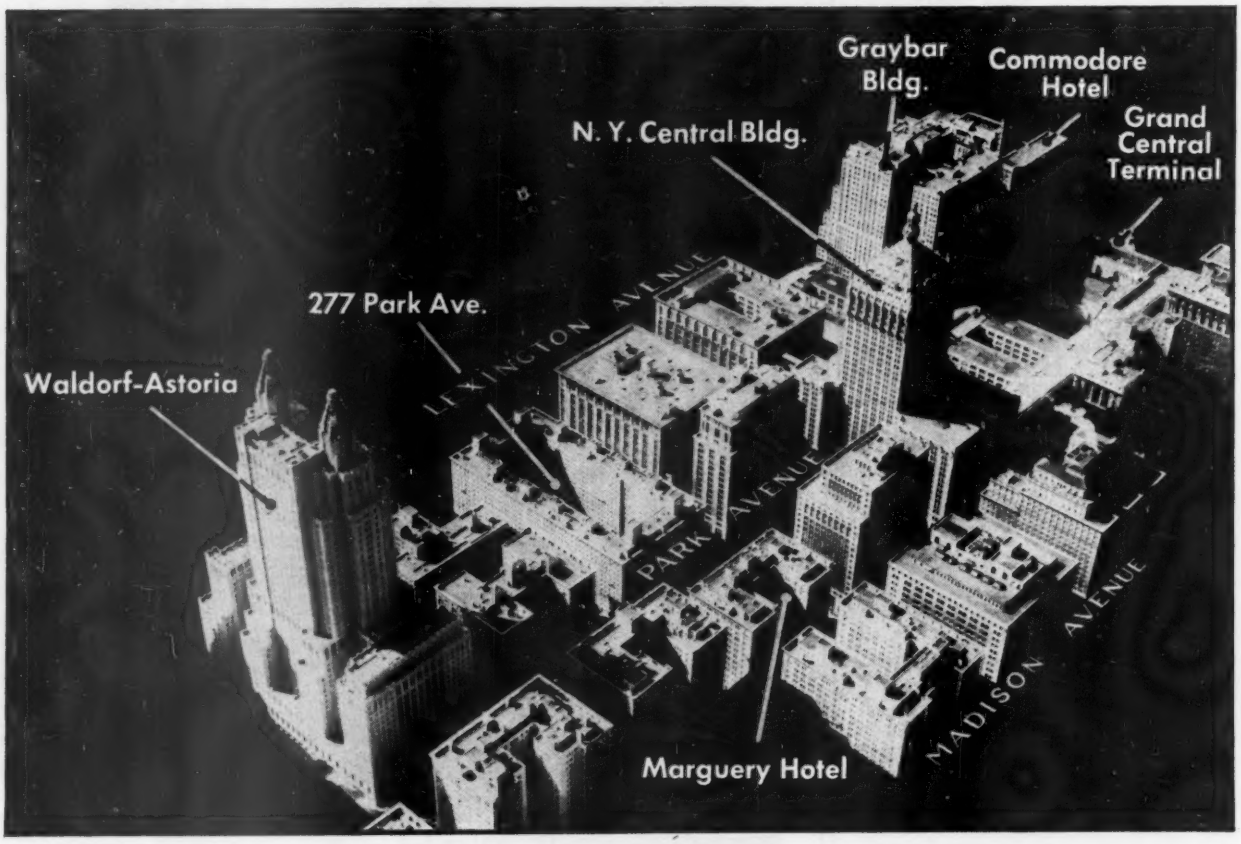
New illustrated bulletin No. 2021 shows Better Ways to control costs.

TOLEDO

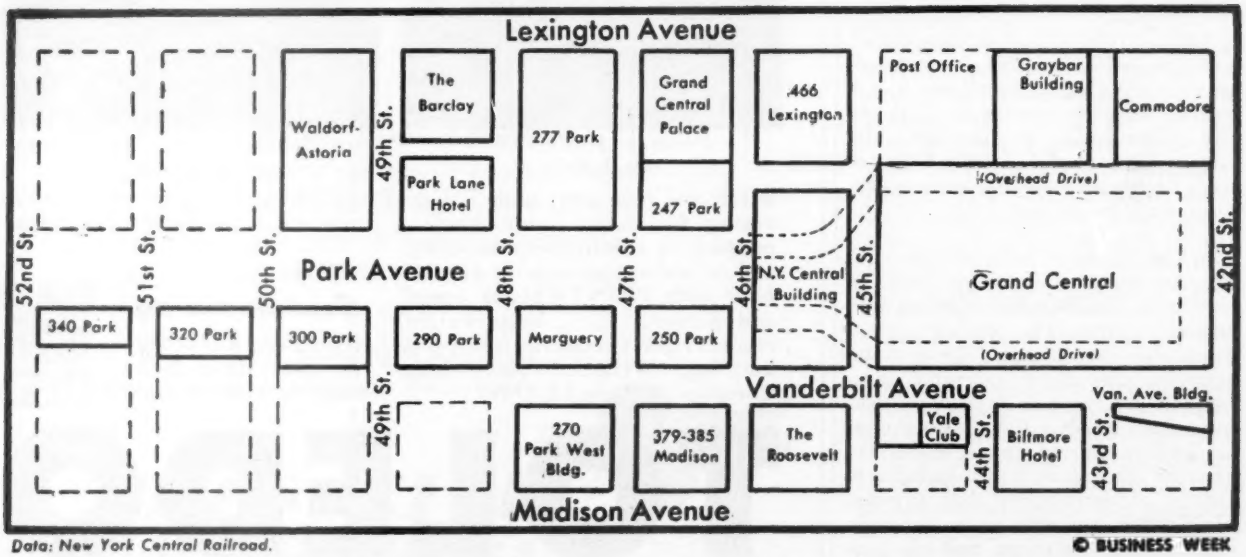
HEADQUARTERS FOR SCALES

FINANCE

Park Avenue: Manhattan's Gold-Plated



These swank, costly buildings crowding New York's Park Avenue were built over . . .



Data: New York Central Railroad.

© BUSINESS WEEK

Land owned by the New York Central (these tracts are outlined by heavy black border)

Railroad Yard

The two railroads using Grand Central will take back the air rights to a building site over their tracks.

There's trouble on Manhattan's Park Avenue this week. If it had turned up anywhere else, you might dismiss it as the usual sort of tangle with the landlord. But this is something special: The Park Avenue difficulty has its roots in one of the oddest and most interesting real estate stories in the nation.

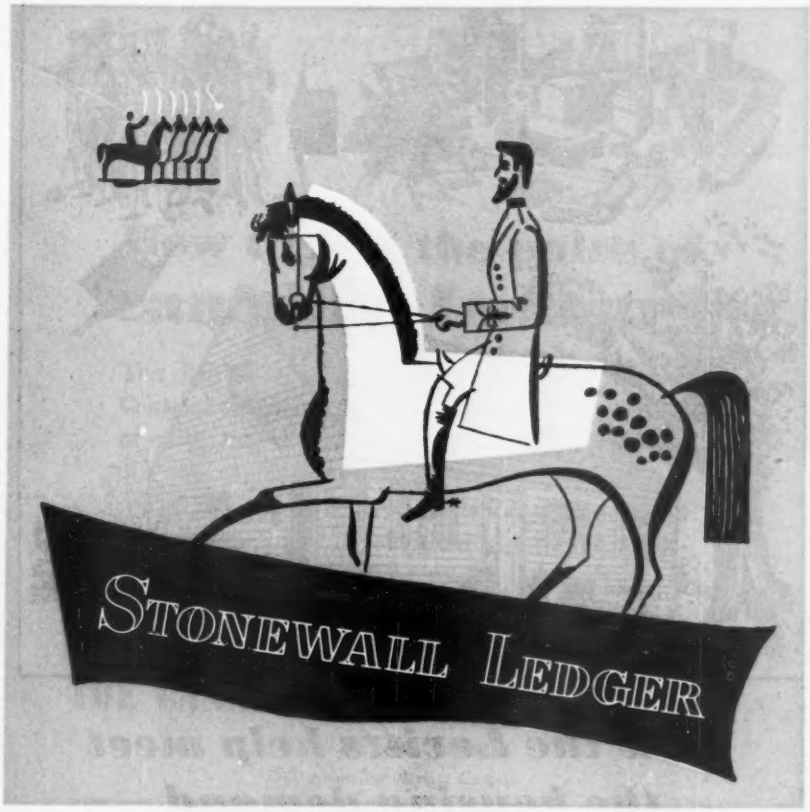
The stockholders of 277 Park Ave. Corp., which operates a swank apartment house there, may lose their building and the air space it occupies to two railroads that operate beneath it. The two railroads are the New York Central and the New York, New Haven & Hartford—joint users of nearby Grand Central Terminal.

• **Air Rights**—In 1923, 277 Park Ave. Corp. leased the air rights covering a city block in the Grand Central area from the Central and the New Haven for a period of about 21 years, and constructed an apartment house above the busy trackage. The corporation had the privilege of two air-lease renewal terms of 21 years each.

The land actually is owned by the Central. But the railroad has leased out the air rights—the privilege of building on the land—while retaining rights to subsurface use. The New Haven shared with the Central the expenses of building the columns and foundations which support the apartment house. And the New Haven has a share in the rental the lease brings.

• **Bankruptcy**—The 277 Corp. went into bankruptcy during the 30's, after defaulting on its payments under the lease. It was reorganized under 77-B. When the first lease ran out in 1943, the corporation owed about $450,000 in rent. So it had lost its right to have the lease renewed for 21 years. Instead, it got a five-year lease.

Now the railroads have decided not to renew the lease, but to take over the property Oct. 1. Naturally the stockholders of 277 Corp. aren't happy about this. On the other hand, the railroads claim that: "Since 1943 comparatively little maintenance and rehabilitation work has been performed by 277 Corp., which resulted in some measure in making funds available for distribution as dividends to the stockholders of that corporation." The roads say that it will



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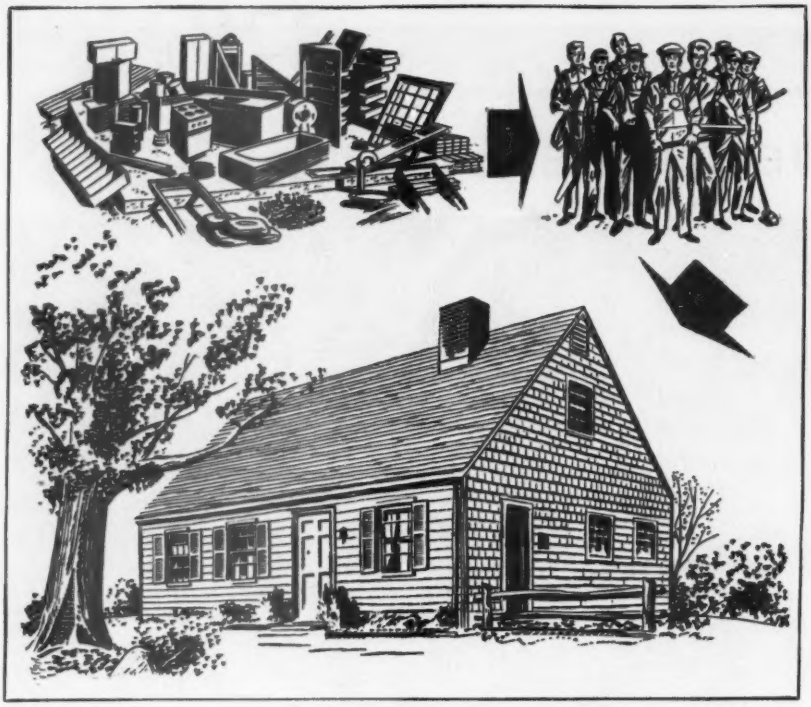

How the Levitts help meet the housing demand

SOME YEARS AGO, builders Levitt & Sons, of Manhasset, Long Island, decided that usual home building methods were disorganized, slow, and costly.

They envisioned a bold plan. First, to assure adequate building supplies at all times, they would stockpile, through a wholly owned subsidiary, everything they needed for hundreds of homes—including whole forests of Pacific timber reserves. They would pre-cut and pre-fit, as far as possible, everything that goes into a house. And they would organize skilled assembly crews—each highly specialized in one phase of building construction—to move quickly from one site to another, operating an "assembly line."

When the housing shortage developed, Levitt & Sons were ready with the plan in detail, and the organization.

Such an unusual program called for unusual financing. But the Bank of the Manhattan Company recognized the merit of the Levitt building project and provided liberal *commercial* credit.

Today, Levitt is America's largest home builder. Six communities and a veterans' city of 25,000 people owe their existence to the Levitts' new idea. And this year, between four and five thousand new homes will be completed—right down to steel kitchen cabinets, electric ranges and refrigerators, automatic laundries, and Venetian blinds.

The Bank of the Manhattan Company is always ready to match creative planning with creative banking.

Bank *of the* Manhattan Company
NEW YORK
MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

cost about $750,000 to modernize the building.

• **Electrification**—How did the two railroads ever get mixed up with residential property in the first place? You can trace the answer right back to an idea that occurred to Central officials just after the turn of the century.

At that time Park Avenue and the blocks now facing it from 49th St. to Grand Central Station at 42nd St. were open railroad yards, where the tracks fanned out to enter the station. At 49th St. the tracks entered a tunnel for about three miles northward. But the smoke from the steam engines was a health and safety hazard in the tunnel. So in 1902 the state legislature ordered the roads to convert their passenger service to electric engines by 1910.

• **Underground**—This order gave the Central officials their great idea. The use of electric engines made it possible to put the whole fan of tracks underground. Steam engines need air for combustion, but not electric ones. The tracks could be spread out under the city streets, thus increasing the number of tracks and the number of trains handled; there could even be two levels of tracks. The right to build above the surface (on foundations set between the underground tracks) could be leased.

Since the New Haven shared trackage facilities with the Central, it felt that it should have the option to share in development of the air rights. The two roads made an agreement to that effect in 1907.

• **Building Boom**—Work began on the present Grand Central Terminal in 1903. Before it was finished in 1913, two office buildings and the Biltmore Hotel were already being constructed over the tracks by outside private interests. In 1919, the Hotel Commodore was finished and several fashionable apartment houses had gone up on the west side of Park Avenue.

Part of the money spent in putting up these buildings—as well as later ones—was advanced by the Central and the New Haven. Where the New Haven entered such arrangements, it also shared the rental.

A great burst of building activity took place in the early 20's. By 1925, nearly every railroad-owned site on Park Avenue had been filled by offices and apartment houses. Thanks to the leasing of air rights, the avenue had become—as a Grand Central brochure put it—a place of "addresses of smart distinction offering the utmost in gracious living."

• **Luxury Living**—The buildings offered apartment units of as many as 16 rooms, including very large living rooms, dining rooms, up to three or four master bedrooms with baths, and servants' quarters of five or more rooms. During the 20's such Park Avenue apartments rented for as much as $1,200 a room

per year. (Because of depression declines, followed by rent controls, landlords are lucky if they can get half that today for the same apartments.)

In 1927 the Graybar Building was finished. It soon became a temple of American advertising. Early in 1929 the Central finished its own New York Central Building, a $12.8-million, golden-topped tower straddling Park Avenue. The famous Waldorf-Astoria was ready to move uptown and become a neighbor.

• **The Crash**—But the bottom was about to drop out of the boom. Work began on the Waldorf-Astoria on Oct. 29, 1929—the day that nearly 16.5-million shares were traded on the Stock Exchange and the average for industrial stocks plummeted 30.5 points.

From then on the going was tough for the Park Avenue apartment houses and the nearby hotels. People were no longer able to afford 16-room apartments or maintain staffs of servants. Only one apartment house was able to

WALDORF'S PROFITS

Years ago when New York's famed Hotel Waldorf-Astoria was located on 34th Street, it was one of the country's most profitable hotels. Year after year, old timers report, it could be depended upon to chalk up earnings of around $1-million annually on gross receipts of under $5-million.

But ever since it moved uptown to Manhattan's Grand Central area in the early 1930's, the Waldorf has been able to boast only that it is the nation's tallest, most costly, and most luxurious hotel, with the largest annual gross receipts of them all.

From the time the Waldorf opened at its new location until 1944 it produced nothing but red ink. Losses added up to some $14-million in the 1932-43 period.

Nor have yearly profits since been impressive. They have ranged between $502,000 and $645,000. The 1947 net was $584,000, only 16% higher than 1944, even though gross receipts climbed from $12.7-million in 1944 to a new high of $18.1-million last year.

Profits this year may be somewhat better; in the first six months they totaled $494,000 as against $347,000 in the same 1947 period.

How to feel the pulse of Canadian Industry

This Bank's monthly index of industrial activity in Canada keeps many American business men informed of the output of ten groups of industries and shows the percentage of capacity currently utilized.

This index, with other valuable Canadian statistics and analyses, is published in our Monthly Commercial Letter, which will be mailed regularly upon request.

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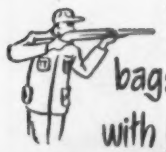

Ithaca Gun bags big coal saving with CANTON STOKER

One of the most severe winters on record followed the Canton Stoker installation at Ithaca Gun Company, Ithaca, N. Y. Yet coal cost was almost $500 less than during the preceding mild winter . . . labor maintenance cost took a nose-dive, too! Boiler efficiency was increased by following Canton Engineers' recommendation for a higher stack and today Ithaca Gun reports "no shutdowns since the installation, practically no maintenance."

There is nothing unusual about Ithaca's experience. Canton Stoker users everywhere report large fuel and labor savings with dependable, low-cost operation. Write for bulletins or have a Canton Engineer call. CANTON STOKER CORP., MAIN PLANT, CANTON 2, OHIO.

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Lifting capacities 500 to 40,000 lbs.
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keep up lease payments to the railroads. This was the building at 290 Park, which was co-operatively owned by residents.

Most of the apartment houses on railroad land were operated by small groups that in the roaring 20's had not only recovered their original equity-capital investment but had also been able to tuck away handsome profits. When the market for large apartment units collapsed, they were not interested in putting in the money to revamp their buildings for smaller apartments. And as the 30's began, the buildings started dropping back into the lap of the railroads.

• **Concessions**—However, 277 Corp. was in a somewhat different position. Under the 77-B reorganization, the original stockholders were of course wiped out. The first mortgage bondholders made a considerable sacrifice: They received one share of common, par value $1, for each $100 principal in bonds. This new stock was quite widely held. The railroads felt it was poor policy to take over in such circumstances, so they made concessions on rent to give the old bondholders a chance to recoup some of their earlier losses.

Furthermore, 277 had been built with smaller apartment units than most others. So it was in a better position during the 30's than some of the other buildings.

• **Hotels**—The railroads took over the other apartment buildings and revamped most of them into smaller apartments. The Biltmore Hotel and the Hotel Roosevelt were also taken over after defaulting on their rentals. (The Biltmore and the Hotel Commodore had been leased by the same corporation, which was allowed to retain its leasehold of the Commodore.)

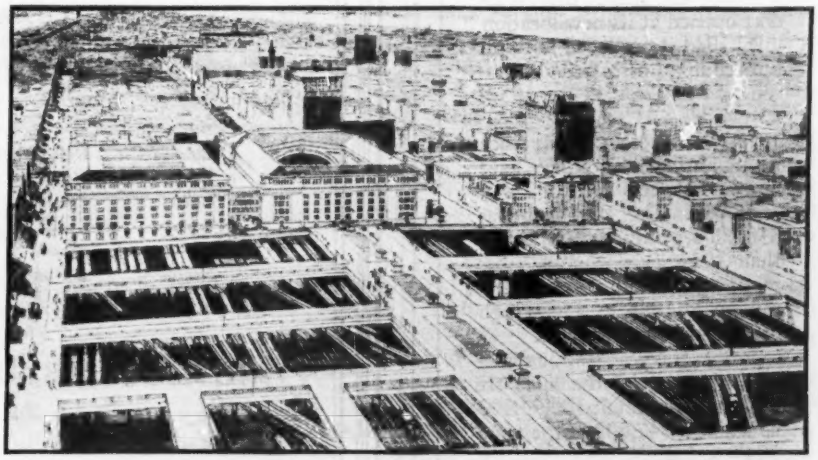
The Waldorf was not taken over, either. It had been built by a private corporation for over $20-million, of which $5-million was advanced by the Central and $5-million by the New Haven. The rest came from the sale of leasehold bonds and common stock. The lease was for an initial period of about 27 years, with the right to two 21-year renewal periods. It called for an annual rent ranging from $600,000 to $800,000, and a 6% payment on the $10-million advance, with 2% of the principal to be repaid each year. About 58% of taxes on the land and all of the taxes on the building were to be paid by the leasing corporation.

• **Offices Do Better**—The Waldorf opened in 1931, but was unable to meet its lease payments or keep up the interest on its bonds (box, page 101). It was eventually reorganized in 1936 under 77-B. In the reorganization its capital underwent a sharp shrinkage. The roads also modified their lease terms: They changed payments to a basic rent of $1-million a year, plus varying percentages of excess earnings above that amount.

The office buildings did better. For instance, the Graybar Building was put up by Eastern Offices, Inc., under a 1925 lease for 21 years with the right to two 21-year renewals. Annual rent was $300,000, plus half the taxes on the land and all the taxes on the building. The lease was renewed in 1946.

• **Corporate "Canyon"**—The success of the Graybar and other office buildings—compared with the griefs of residential buildings built over the tracks—makes some people think that the Park Avenue apartment houses on railroad land will eventually give way to office buildings. This is the opinion of dynamic William Zeckendorf (BW—Aug.16'47,p28), president of the New York real estate firm of Webb & Knapp, Inc. Zeckendorf assembled the East Side site which John D. Rockefeller, Jr., bought and gave to the United Nations.

Zeckendorf believes that midtown Park Avenue is destined to be a "canyon of corporate homes." Apartment houses



UNDERGROUND NETWORK of tracks serving Grand Central Terminal, as conceived by artist early in the 1900's. Streets are actually bridges, with Park Avenue in center

can't give the return that office buildings would, he says. He reasons that: (1) the apartment houses aren't tall enough to get a maximum return out of the ground space they occupy; (2) tax rates are too high for residential property to carry; (3) rent control keeps rent down while costs of operation and maintenance are zooming; (4) people can't pay the rents.

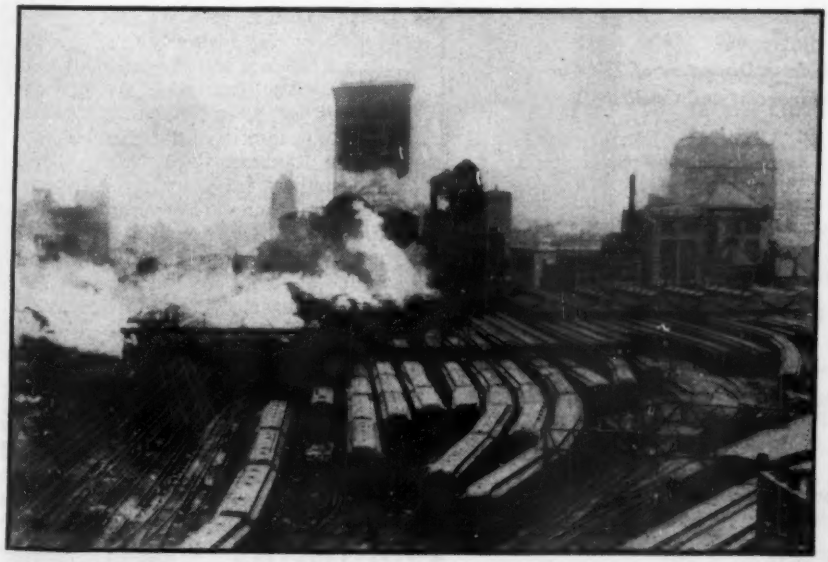
• **The Marguery**—As proof of his argument, Zeckendorf points to the two apartment buildings at 270 Park. These buildings, usually called the Marguery, were built over the tracks by a private company in 1916-18. The railroads advanced about $3-million. The lease was for 21 years with two 21-year renewal periods. It provided for annual payments of about $250,000 for rent—plus 6% of the advance, 2% of which was to be repaid each year.

The operating corporation defaulted on its rental, and in 1932 assigned its leases to a subsidiary corporation of the railroads, 270 Park Ave. Corp. The 270 Park Ave. buildings differed from the other apartment buildings which the railroads took over: They were so designed they couldn't be made into smaller apartments with ease.

• **Delayed Plans**—In 1945 the railroads transferred the lease on the 270 Park Ave. buildings to 2639 Corp., which was first owned by Webb & Knapp, Inc., and then by Time, Inc. The idea was that 2639 Corp. would tear down the apartment house and put up a modern office by 1949.

But under federal and city housing

PARK AVENUE IN HORSE-AND-TROLLEY DAYS, looking northward from 57th Street. Steam engines ran in the tunneled cuts, giving commuters a smoke diet



GRAND CENTRAL'S OPEN TRACKS IN 1906, before they went underground. Tall building on right is old Manhattan Hotel. One to its left is former Hotel Belmont

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regulations, the 270 Park Ave. buildings can't be torn down until equivalent accommodations are found for its tenants. So the project has been postponed. But this doesn't change Zeckendorf's conviction that he will be proved right in the long run.

• **Business or Residential?**—Other real estate experts are skeptical. After all, Park Avenue has the reputation of being the world's swankiest residential district. They can't believe there will be any major change along the avenue, even in the Grand Central zone.

But whether midtown Park Avenue develops into a center for the offices of blue-ribbon corporations, or whether it remains a fashionable residential district, it will undoubtedly continue to be one of the major nonrail interests of the roads that use its cellars.

State Tax Collections Increase Sharply

State tax collections reached their highest level on record in the fiscal year ended June 30, 1948. The Dept. of Commerce has added up the figures, finds the total hit $7.9-billion—$1.1-billion more than in the previous year.

• **Sources**—The biggest revenue producer for state governments was sales taxes. Collections in 1948 fiscal year were $1.5-billion—25% more than in 1947, four times higher than in 1940.

Gasoline taxes brought in $1.3-billion, liquor taxes another $400-million, and levies on tobacco about $300-million. Other levies were lucrative, too: License charges on motor vehicles, and state corporation income taxes, contributed $600-million each; levies on individual incomes, $500-million more.

There were several reasons for the sharp increase in state tax receipts. Higher prices, higher wages, and increased business activity had a lot to do with it. Also, four more states started sales-tax levies, and seven states began collecting additional tobacco taxes.

• **State Rankings**—New York collected $900-million from its residents—more than any other state government. California wasn't far behind. Its take added up to $800-million. States in the around-$400-million class included Illinois, Michigan, Ohio, and Pennsylvania.

On a per-capita basis, the story was somewhat different. Here the leaders were all western states. Washington, which collected an average of $91 per person, led the parade. Arizona and California were next with $84, followed by Nevada with $73 and Colorado with $72. The average rate per capita on a national basis came to $55 in the 1948 fiscal year. Low in per-capita collections were Alabama and Kentucky, with averages of $37 each.

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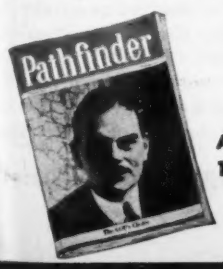

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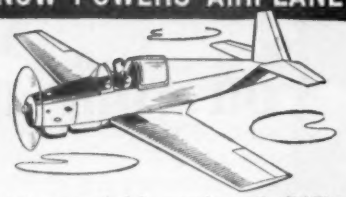


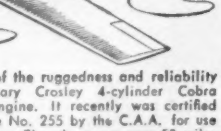
Here's new proof of the ruggedness and reliability of the revolutionary Crosley 4-cylinder Cobra (COpperBRAzed) engine. It recently was certified for Type Certificate No. 255 by the C.A.A. for use in the Mooney Plane. The plane averages 50 miles per gallon of gasoline at cruising speed.

Al W. Mooney, president of Mooney Aircraft, Wichita, Kan., recently wrote Powel Crosley, Jr., Crosley Motors president:

"All tests were passed with indications that the life of the Crosley Cobra engine will be exceptional by aircraft as well as automotive standards. Ground testing has extended over 2 years; flight testing more than a year. In that time we have had the most trouble-free service from this engine that we have experienced in 23 years in the industry. In our opinion, your engine is as fine a mechanism as is in existence." *dual ignition added.

In countless other ways, too—commercial refrigeration, farm equipment, materials handling, marine power—the Cobra is setting new performance records.

STATION WAGON: All Steel: seats 4 or 2 and ½-ton load. Priced $600 to $700 under other makes; costs about ½ as much to run. Powered by the Crosley liquid-cooled engine.



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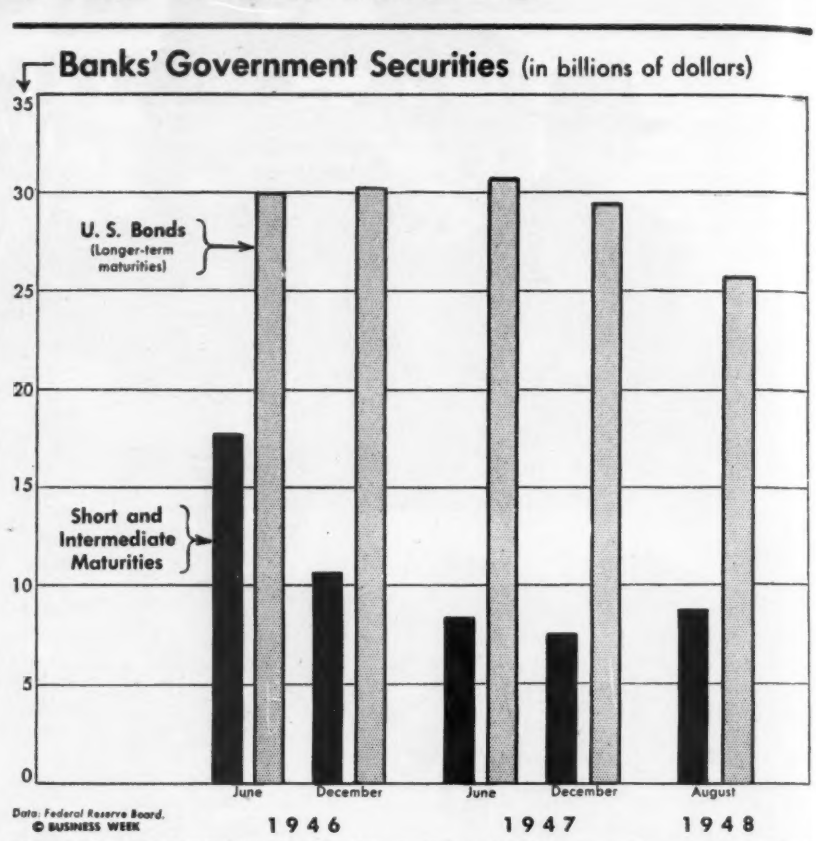

CHANGES IN GOVERNMENT-SECURITY HOLDINGS of weekly reporting Federal Reserve member banks show the effects of changing interest rates and spotlight the . . .

Fight Over Bond Supports

Reserve Board tries to tighten credit without lowering its bond-market pegs—by hiking banks' reserve requirements. But advocates of higher interest rates say it won't work.

There is a real fight shaping up over the Federal Reserve Board's policy of supporting government-bond prices.

• **The Line-Up**—On one side are the government officials who want to keep prices at par or above. Many commercial bankers, who are heavily invested in Treasuries, line up with them. Such a policy makes 2½% the top yield on long-term government issues.

On the other side are various investors—especially life insurance companies—and economists who believe that the rate should go higher. Some of them are thinking about improving their earnings. Others think higher interest rates offer the best hope of checking inflation.

• **To Tighten Credit**—The Federal Reserve Board's decision last week to use part of its new power to raise the reserve requirements of member banks may bring things to a head. Officials have passed the word that the board chose the hike in reserves as an alternative to dropping the pegs on government-bond prices. It hopes to tighten credit this way without touching off a drastic rise in interest rates.

The support buying of the Reserve

Security Price Averages

	This Week	Week Ago	Month Ago	Year Ago
Stocks				
Industrial	155.4	160.8	156.9	147.2
Railroad	48.8	51.2	48.2	41.8
Utility	70.8	71.9	70.7	74.2
Bonds				
Industrial	97.8	97.9	98.0	102.9
Railroad	86.8	87.0	86.3	87.9
Utility	94.4	94.7	95.0	102.7

Data: Standard & Poor's Corp.

Banks is the only thing that keeps the longer-term government bonds from dropping below par. In this respect, the board's money-market problem is just the reverse of what it was two years ago.

• **Difference in Yield**—In 1946, banks were selling their short-term government securities and using the money to buy the longer issues. That drove the price of the higher-yielding longs far above par.

Since then, the Treasury has let its short-term rates creep upward. The long-terms now look less attractive by comparison. So banks have been selling them and moving back into the shorts (chart). This process is mildly anti-inflationary.

• **Not Much Effect**—But with the Reserve Board supporting the market on the basis of a 2½% long-term yield, the trend toward higher rates hasn't gone far enough to have much effect on inflation. And the hike in reserve requirements can't make any permanent difference in the picture. Banks can get the additional reserves simply by selling part of their ample holdings of government securities in the market. The board's support policy will keep them from taking a loss.

Corporate Bonds Acting Poorly

Corporate bond prices generally have been drifting towards lower levels since early in June. The drop so far hasn't been particularly sharp. Neither has it been widespread enough to be alarming.

• **Gains Offset**—But what has been happening to bond prices lately has already had some unfavorable effect on the capital markets. And slow as the down drift has been, it has proved enough to erase most of the gains that the bond list scored during its rally last spring.

Many corporates, in fact, are now not far above their 1946-48 lows, as the price sampling below shows. And there are no signs that they've hit the bottom yet.

• **Stock Market Watchful**—Stock traders are keeping a sharp eye on bond developments—with very good reason. Often a weakness in bond prices has been followed by declining stock values.

Bond prices, for example, topped some time before stocks did in the spring of 1946. They were heavy, too, weeks before the September stock-market bust that year. Again, the droop in the bond market in the closing months of 1947 forecast the sharp January-March 1948 stock-price break.

Bond Issue	Offering Price and Year Sold#	1946–1948 Price Range# High	Low	Recent Price#
American Tel. & Tel. 2⅝s, 1986	100.85 (1946)	100.37	85.75	88.62
Atch., Top. & S. Fe 4s, 1995	*	141.00	115.25	120.75
Bethlehem Steel 2¾s, 1970	100.50 (1945)	105.62	95.00	97.12
Boston Edison 2¾s, 1970	*	108.75	98.12	99.25
Brooklyn Union Gas 2¾s, 1976	103.00 (1946)	103.25	86.50	87.00
Chesapeake & Ohio 4½s, 1992	*	151.37	121.00	124.25
Chic., Bur. & Quincy 2⅞s, 1970	100.80 (1945)	103.37	90.25	96.37
Cincinnati G. & E. 2¾s, 1975	101.00 (1945)	107.87	97.62	98.25
Cleveland Elec. Illum. 3s, 1970	*	110.50	102.12	102.25
Great Northern 2¾s, 1982	101.14 (1946)	100.62	82.50	85.50
Hackensack Water 2⅝s, 1976	105.00 (1946)	105.00	93.00	94.25
Koppers Co. 3s, 1964	*	107.00	99.50	101.00
N. Y. Power & Light 2¾s, 1975	102.50 (1945)	106.75	94.12	96.25
Norfolk & Western 4s, 1996	*	143.00	126.50	127.25
Northern Pacific 4½s, 2047	*	110.00	86.00	87.75
Pacific Gas & Electric 3s, 1971	*	110.50	100.00	100.25
Pennsylvania R. R. 4¼s, 1981	*	135.50	92.00	99.25
Reading Co. 3½s, 1995	101.00 (1945)	105.50	81.50	83.25
Shell Union Oil 2½s, 1971	101.50 (1946)	101.50	91.00	94.25
Socony Vacuum Oil 2½s, 1976	100.50 (1946)	100.50	90.25	93.25
Southern Pacific 2⅞s, 1986	101.50 (1946)	102.25	80.00	85.50
Southern Ry. 5s, 1994	*	145.00	112.00	114.12
Standard Oil (N. J.) 2⅞s, 1971	98.00 (1946)	99.75	91.50	92.62
Swift & Co. 2½s, 1972	100.50 (1947)	103.75	95.50	95.50
Texas & New Orleans 3½s, 1990	100.00 (1946)	101.00	88.87	91.00
Texas & Pacific 5s, 2000	*	152.50	121.50	124.50
U. S. Rubber 2½s, 1976	100.50 (1946)	101.50	90.00	92.25
Virginian Ry. 3s, 1995	106.00 (1945)	113.00	94.50	96.00
Westinghouse Electric 2½s, 1971	100.50 (1946)	103.00	97.00	97.00
Wheeling Steel 3¼s, 1970	103.00 (1945)	108.00	93.50	98.00
Wisconsin Electric 2¾s, 1976	101.56 (1946)	102.50	93.00	93.50

#All prices are on % of par. **Outstanding before 1945.*

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What your engineers want when they specify forgings are qualities and economies that are unobtainable, except in forgings. More ways to reduce the cost of parts at the point of assembly; better product performance; reduction of *downtime* due to failure of parts; and a greater factor of safety—all these are obtainable with forgings. Forgings provide rapid assembly of complex parts by welding adaptability of widest range. Forgings permit reduction of dead weight because maximum strength and toughness are obtainable in lighter sectional thicknesses. Forging to shape avoids waste of metal and reduces machining and finishing time-cost. Consult a Forging Engineer about the cost-reducing possibilities and metal quality that are obtainable with forgings. Only a Forging Engineer can inform you fully regarding the many qualities and economies that are obtainable with forgings.

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In everyday language you're shown how to turn your imagination into cash. This guidebook gives you the secrets of finding ideas, developing them, putting them across and reaping the rewards. Your ideas need not be revolutionary or world-shattering either . . . ordinary, simple ideas or different "twists" to an old idea can add to your income substantially . . . *might even make you rich!*

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- how Daniel J. O'Connel made a million dollars a year—by glorifying the American hamburger.
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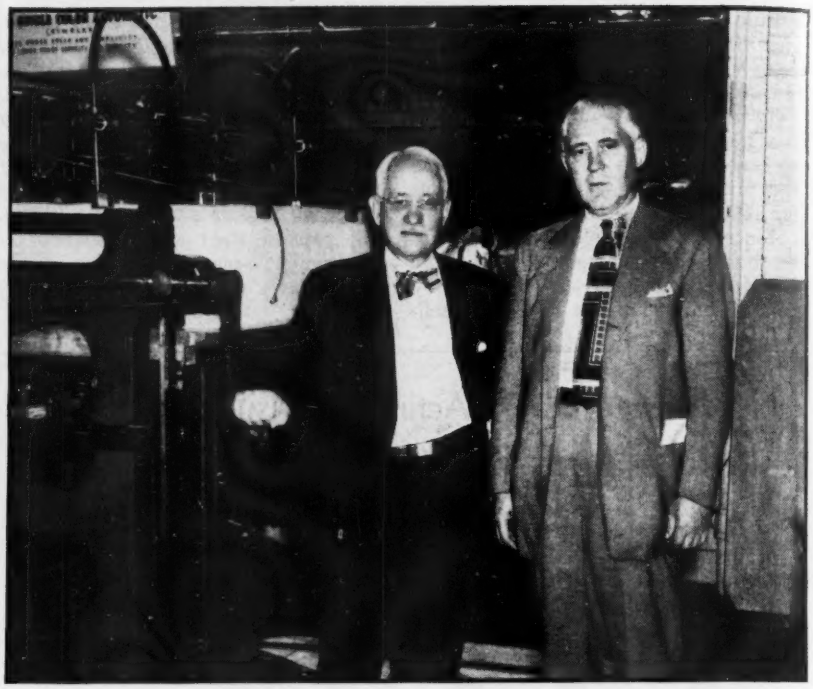

Pressmen, Publishers Mark 50 Strifeless Years

Newspaper publishers and their pressmen have had peaceful labor relations since before the turn of the century. Labor troubles in other branches of the printing industry haven't been reflected in newspaper pressrooms. Management and union agree about the reason: industry-wide arbitration.

Dr. George N. Dale (right), chairman of the labor committee of American Newspaper Publishers' Assn., was a guest of the A.F.L. Pressmen's Union at its recent quadrennial convention at Pressman's Home, Tenn. Also attending was Dr. Frederick S. Deibler (left), chairman of the Board of Arbitration set up under pressmen's contracts. George L. Berry, union president, introduced them.

Their message: Both publishers and pressmen have benefited from arbitration under a continuous, 50-year-old union-management agreement; it merits study as a "model for industrial peace and security" for every union, employer, and industry.

Highlighting Labor Peace

First report of National Planning Assn. details 14 years of strike-free labor-management relations in Pacific Coast paper industry. Recommendations are made to other industries.

Much of management's attention was focused this week on labor peace, despite the most serious flurry of strikes since early spring.

• **Deadlocked Still**—On the strike front, the nation's top labor dispute was still the West Coast dock strike (BW—Sep. 11'48,p108). The Waterfront Employers Assn. of the Pacific Coast refused to resume negotiations with Harry Bridges' International Longshoremen's & Warehousemen's Union (C.I.O.).

The reason: 1,399 stoppages "in direct violation of contracts" since 1934.

• **First Report**—Nevertheless, there was greater interest in the labor peace front. The reason was that the first of 15 case studies of labor-management harmony due to be issued by the National Planning Assn. had just come out. N.P.A. is a nonprofit organization of labor, farm, business, and professional spokesmen.

N.P.A. will issue its other 14 reports at intervals of one month. The next seven will cover labor relations of companies in steel, chemical, aircraft, glass, men's clothing, food, and textile industries.

• **Reverse Situation**—The first N.P.A. report deals with a situation which is the exact reverse of that reported by the

Waterfront Employers Assn. of the Pacific Coast. It tells of 14 years of strike-free labor-management peace in the Pacific Coast pulp and paper industry.

It covers a three-state bargaining unit which includes 18 companies and two A.F.L. unions—the International Brotherhood of Pulp, Sulphite & Paper Mill Workers, and the International Brotherhood of Paper Makers. It lays particular stress on the labor relations policies of the Crown Zellerbach Corp., largest of the 18 employers.

• **Harmony**—N.P.A. considers the West Coast pulp and paper industry a prime example of employer-employee harmony because:

No strikes have occurred as a result of labor-management disputes between the two unions and any of the 18 employers since 1934.

Few grievances in the past 14 years have gone further than the local plant grievance committee. The regional contract between the companies and unions sets up a Joint Relations Board to act on disputes which can't be settled at the plant level. So far, the joint board has had to take up only 10 grievances—less than one a year.

Little federal intervention was necessary in the industry's labor relations during the 14-year period. The record: One unfair labor practice charge against a company under the National Industrial Recovery Act; no cases at all under the National Labor Relations (Wagner) Act; one wage dispute brought up before the wartime National War Labor Board.

• **Contributions to Peace**—N.P.A.'s 29-man committee of experts, headed by Clinton S. Golden, a long-time high official in C.I.O., had this to say about the industry's labor relations:

"Industry-wide bargaining in this situation, without domination by either side or collusion against the consumer, has made a contribution to peace in several major ways. It has standardized wages and conditions. It has increased union security by fostering immunity from attacks by rival unions. It has increased the security of the individual employer from discriminatory attacks. It has increased the cost of conflict, and so has discouraged strikes."

• **Social Skill**—The committee warns, however, that industry-wide bargaining could have caused trouble, or aggravated it, if there had been any "ideological incompatability" between the parties. There was none. The work force was homogeneous. Jobs were steady and profitable. And, most importantly, according to the committee, the bargaining parties demonstrated real "social skill" in negotiating contracts and administering them in both letter and spirit.

The case study "offers no single cure-all for industrial conflict." But, said the

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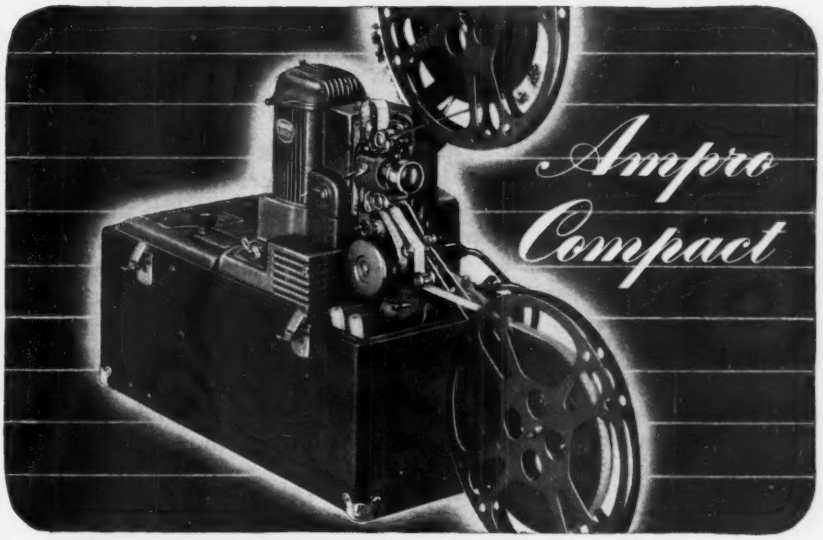

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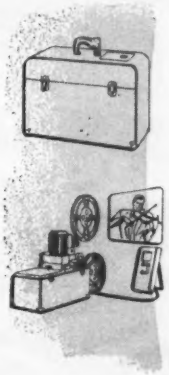

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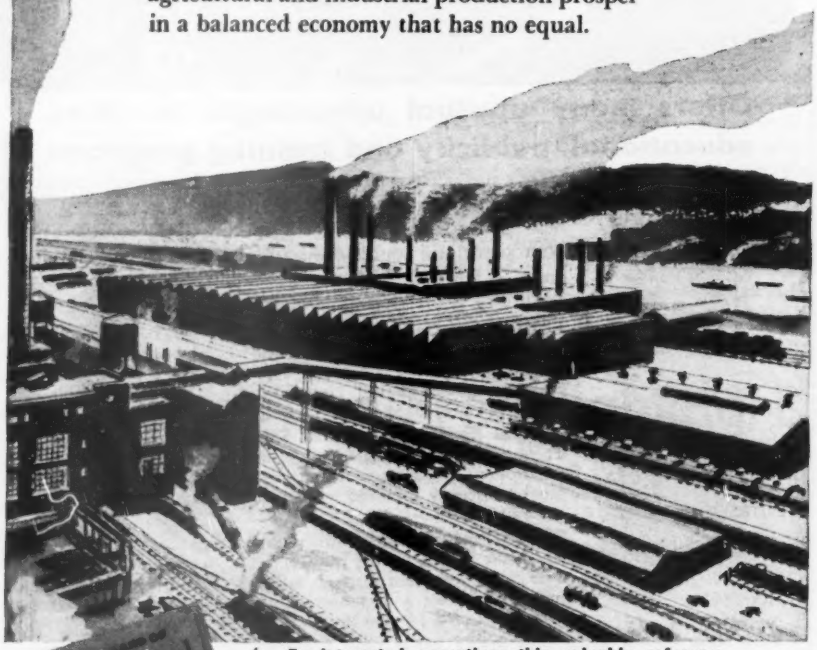

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committee, other industries could use many Crown Zellerbach policies and procedures to advantage. (Crown Zellerbach was singled out because its policies influence those of the other 17 companies.)

• **Good Points**—Here are some of the key contributions to peace which the study recommended to other industries.

(1) Crown Zellerbach has a practice of consulting foremen and union representatives on an almost unlimited range of problems, and of inviting the union to take part in management on a consultative basis.

(2) It selects employees partly on the basis of their ability to fit into the human relations system of the plant.

(3) It has an effective program for channeling information down to workers and up to top management, with foremen and shop stewards as key transmitters.

(4) It has a wide diffusion of management responsibility.

(5) It avoids pat formulas and rigid rules in favor of a flexible approach to problems.

(6) It avoids paternalism.

(7) It has a policy of strengthening the sense of security of individual workers by promotions largely in line with seniority, by a liberal retirement system, and by advance discussion with workers on technological changes.

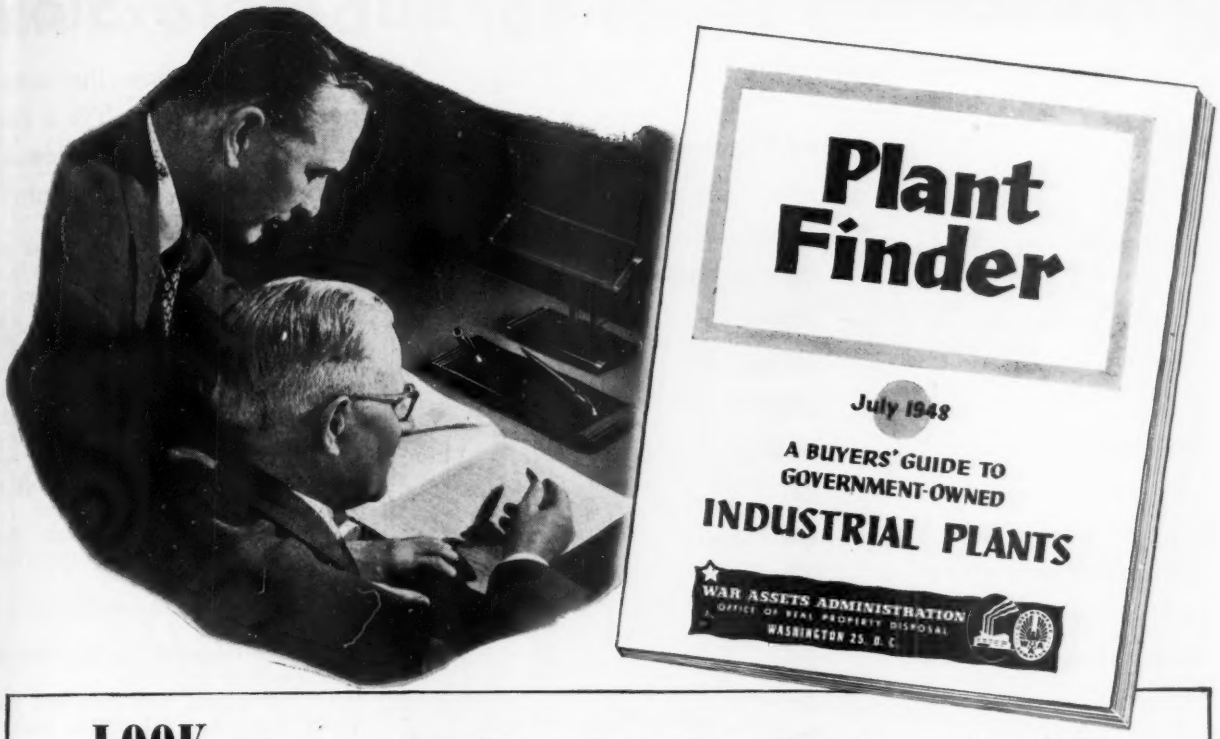
(8) It has a policy of bargaining with its unions on a high level, with principals on both sides taking part—and with lawyers barred.

• **Warning**—While conditions at Crown Zellerbach are good, the N.P.A. committee warned: "The existence of peace . . . is not assured for the future. One of the major sources of insecurity and a potential disruptive factor has been rival unionism. New uncertainty has been introduced by the Taft-Hartley act, which gives preference for craft bargaining units.

"This could threaten the industry-wide bargaining mechanism which has functioned so successfully in the industry as an instrument of industrial peace. . . ."

• **The Authors**—Authors of the case study were Dr. Clark Kerr and Roger Randall of the Institute of Industrial Relations, the University of California. They worked under the supervision of the Golden committee as part of the N.P.A. project started in 1947.

The Pictures — Acme—22, 66; Brown Bros.—105 (top); Brownsville Herald—126; David Sobel Studios—41; European—23; Harris & Ewing—120; Wide World—51, 125.



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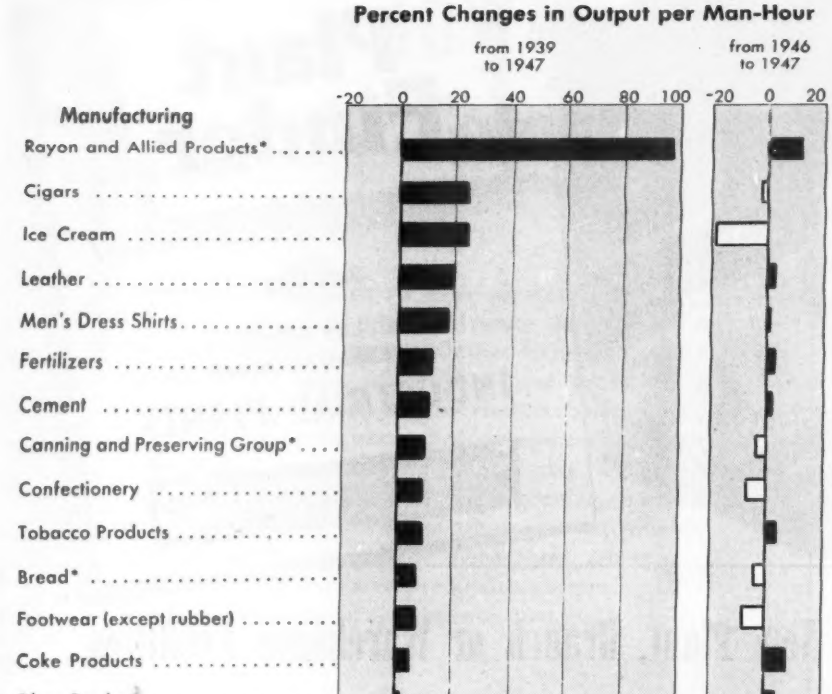
Productivity Is Rising, But More Slow

Surveys show that output per man-hour is up 5% a year, now is about at 1941 levels. Better productivity data coming.



Where does industry stand on productivity—that is, output per man-hour?

That's a vital question these days, but also an awfully tough one, for while individual employers can tell, roughly, what has happened to their own output, the over-all picture is obscure. There's no official index of changes in productivity for all of industry, either for recent years or since prewar days. Nor are there any official estimates for most of the separate manufacturing industries.

• **Three Facts**—However, current statistics, surveys, and analyses pretty clearly show that:

(1) Productivity in manufacturing industries is rising.

(2) It is rising less rapidly than had been expected.

(3) Its current level does not differ greatly from the 1941 prewar peak.

• **Long Wait**—These facts provide only a partial answer to what management wants to know. The full, up-to-date answer isn't likely to come for about two years—until the 1947 Census of Manufactures is tabulated and analyzed. It will give the first real benchmark estimates of productivity since prewar.

And by the time the census report comes out (1950), management may have another reliable yardstick. The Bureau of Labor Statistics is testing a new program designed to keep closer track of industrial productivity.

• **Most Recent Study**—The most recent industrial study of productivity was made by Factory Management and Maintenance, a McGraw-Hill publication. Factory surveyed plants employing almost 10% of all U. S. factory workers. The result is considered an accurate reflection of conditions in industry as a whole.

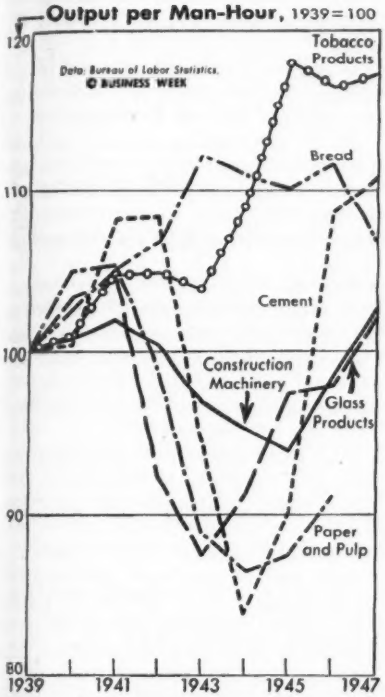
Factory reported: Productivity has risen in all of the eight industry groups. Gains range from 2.3% to 5.1%. The average gain for the period—from mid-1947 to mid-1948—was 4.4%.

• **BLS Support**—Official BLS reports back up the conclusion that productivity is rising. Despite their limitations, they are of interest for what they show:

Of 23 manufacturing industries surveyed—ranging from small to fairly big—14 reported increased productivity between 1946 and 1947. Nine reported declining output. The rate of gain was greater than the rate of decline.

• **On the Rise**—The Factory and BLS studies differ in many ways—such as in

han Expected



the method of measurement, industries sampled, period covered. Yet they confirm each other in finding that (1) productivity has been rising in the past year or more in most lines; and (2) that the average gain has been moderate—less than 5%.

This rate of gain is in line with the historical trend of productivity: an average increase of 3% a year.

• **Half of Expectation**—But the rate is only about half of the 10%-a-year postwar advance which economists and some businessmen had expected. That expectation was based on a similar high rate of increase in productivity which took place between 1919 and 1922 after World War I. It followed a drop in output during the war years, and helped boost output to where it would have been if the war hadn't interrupted the long-range uptrend.

Thus, many figured that a faster upswing would follow the drop in productivity during World War II. Factory surveys during 1947 showed that most plants expected to see an average 7.6% rise in productivity in 1947-48. The latest check shows that most fell far short of that rate.

BLS index figures for 1947 top those for 1939 in most lines. But productivity for industry as a whole was 8% higher in 1941 than in 1939.

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1947 figures don't appear to be higher.

• **Variations**—Productivity patterns between 1939 and 1947 vary by industries (chart, page 115). One group—which includes manufacturers of cement, glass products, and construction machinery—showed a small rise from 1939 to 1941, a moderate drop during the war, and a postwar recovery to about the 1941 peaks.

In another—including pulp and paper-making—productivity took a dive during the war, has not yet recovered.

In a third group—which includes manufacturers of tobacco products—productivity has gone up fairly consistently through the years. In rayon manufacturing plants the gain has been spectacular.

• **Reasons**—How have gains—or losses—in productivity come about? Factory researchers credit "better equipment" and "improved methods" as the main reasons for increases; they blame lack of worker efficiency and "labor troubles" for losses of productivity.

BLS's new method of measuring may turn up more facts on this score. The new method calls for plant-by-plant productivity records in each industry. The old method used an over-all index of output and of man-hour employment by industries. The new data permit comparisons of plants making the same product to show the effect of new equipment, changes in labor relations, etc.

• **Costs and Productivity**—BLS formerly coupled estimates of changes in unit labor costs with productivity estimates. Labor cost per unit is figured from production and payrolls (or output per man-hour and wages per man-hour). Without over-all productivity estimates, it's impossible to get data on unit labor costs for all manufacturing.

It seems logical, though, that unit labor costs have almost doubled. Hourly wages are nearly twice those of 1941, while productivity is about the same.

OLD UNION, NEW LOOK

Another union is knocking on auto-plant doors as a result of the Taft-Hartley law. It is the United Plant Guard Workers of America—an old union with a new look, a stepchild of C.I.O.'s United Auto Workers.

This independent union is made up of former plant-protection locals of U.A.W. The auto workers' union had to let them go because the T-H law denies certification to a production-workers' union if it includes plant guards. The orphan locals first sought to stay in C.I.O. as an autonomous union, but the National Labor Relations Board decided that amounted to affiliation with a union of production workers.

Last June the erstwhile U.A.W. locals set up the new, independent

U.P.G.W. This week it had NLRB's blessing as a qualified union under the T-H law. The board approved a U.P.G.W. petition for an election among 600 plant guards and fire marshals in 12 Chrysler plants in the Detroit area. NLRB rejected Chrysler's contention that the union is still linked to the U.A.W.

When it left U.A.W., the group claimed to represent 7,000 plant guards –about 3,000 in the Detroit area.

Canada Now Has Own Version of T-H Law

Industrial management and unions whose operations extend into Canada were boning up this week on another new labor law: the Dominion's counterpart of the Taft-Hartley act.

Canada's new law went into effect Sept. 1. It makes important changes in procedures for handling labor relations in industries over which the Dominion government has jurisdiction–such as railroads, communications, shipping, and other industries that cross provincial lines.

• **Double-Barreled**–The new labor code will be administered by a 10-man Canadian Labor Relations Board, headed by Justice G. B. O'Connor of the Alberta Supreme Court. Other members are from principal Canadian unions, the Dominion Dept. of Labor, trade associations, and the Canadian Chamber of Commerce.

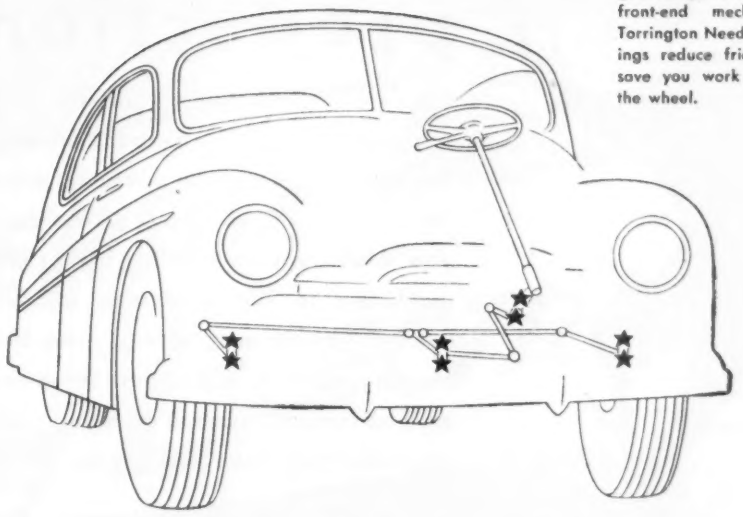
CLRB's decisions in labor dispute cases are final.

Both employer and union activities are regulated. Just as under the T-H law, a union or the boss may be penalized for unfair labor practices. Here are some other double-barreled provisions of the code: It bars (1) discrimination against an employee or job-applicant because of union membership or nonmembership, and (2) use of intimidation or threats to prevent an employee from joining a union, or to force him to join one.

• **How It Works**–The law provides for CLRB certification of a union as collective bargaining agent if a majority of workers favor the union; it also provides for decertification whenever the union no longer represents a majority.

Before a strike vote can be taken, the union must: (1) try to settle its dispute with an employer at the bargaining table; (2) allow a federal fact-finding panel to investigate and report on issues in the dispute; (3) wait seven days after the report.

An employer must go through the same procedure before he can legally close his plant during a labor dispute. The law–unlike the T-H act–has no provision for antistrike injunctions.



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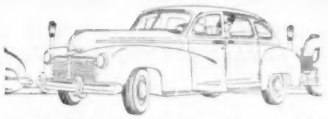

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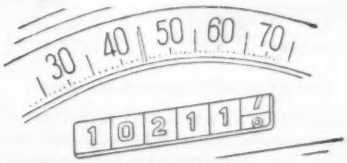

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Heart Ruling

Employer is liable for compensation in heart attack caused by more exertion than worker's usual job calls for.

A heart attack is a "compensable accident" under the Workmen's Compensation Act if it results from "greater exertion than regular work." So reads a recent, significant decision by the Delaware Supreme Court. Management is taking a close look at the ruling: It may open up a broad, new field of liability for employers under the compensation law.

The Delaware Supreme Court upheld a state Industrial Accident Board award of $21 a week for 500 weeks—the Delaware maximum—in the heart attack case.

• **"Unusual" Exertion** — The case: Thomas W. Farran, of Wilmington, was employed as a salesman by Philadelphia Dairy Products Co. Ordinarily, the job required no great exertion. But, in a pinch, he was sometimes called on to carry ice cream cans from a truck into a store. Once, after such a job, he had a heart attack. The "unusual" exertion was blamed, and the Industrial Accident Board awarded Farran the maximum compensation.

The state court based its decision on this fact: The board "found that Farran was not engaged in his usual work at the time of the attack, but, because of an emergency, was performing a task requiring greater exertion than his regular work." The court did not think it pertinent in the Farran case to rule on a much broader question: whether a heart attack, occurring during usual and normal duties of employment, is also a compensable accident.

Such a decision, according to the Supreme Court opinion, would require "determining whether there is evidence sufficient in quantity and quality to support findings that the injury resulted from the performance of the work and was unforeseen and unexpected."

• **Management's Stake** — Management has a good-sized stake in the Delaware decision. Up to now, employers have been concerned about heart disease only from the standpoint of industrial health: Heart attacks and other diseases take a big toll in absenteeism, productivity rates, and employee morale.

Now the Delaware decision has given management a new angle to worry about: If heart attacks are classed as compensable accidents, employers may well have to shell out more money in taxes. Their workmen's compensation tax rates vary in most states according to the amount paid out in claims to their employees. A big award can mean

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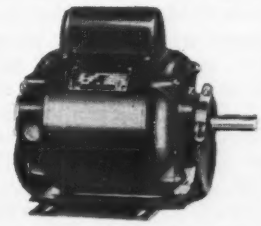

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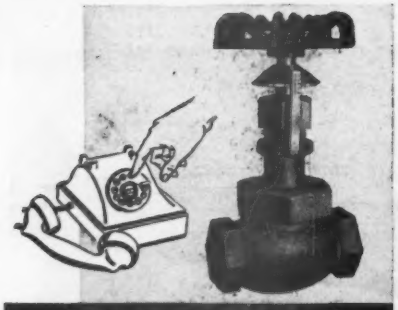

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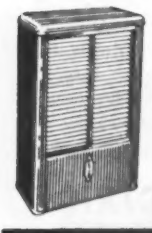

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• **Change of Policy?**—As a result of the Delaware decision:

(1) Management may find it will have to take a closer look at job requirements and health records of employees.

(2) It may have to protect itself by barring friendly urgings to "give us a hand on this" when the task would take more elbow grease than the job for which a worker was hired.

FIRST CHECK is handed to retired Wyoming coal miner by John L. Lewis as . . .

Miners' $100 Pensions Begin

Over-age miners in soft- and hard-coal fields were getting their first pension checks this week from the United Mine Workers welfare fund.

• **Strategic Timing**—The payments—at the rate of $100 a month—represent more than a red-letter day for the veterans of the mines. They climax the long fight by Lewis to get a social-security program for miners. And their timing adds a potent support to the union's security structure—at a time when the union can use it. For as the checks were going out, the government was moving in on U.M.W.—to have its union-shop contracts declared illegal under the Taft-Hartley law.

It is the Taft-Hartley act that gives the pension plan this new importance. The law bars U.M.W.'s traditional closed-shop contract. The substitute union-shop clause was jeopardized by Lewis' bitter fight against Taft-Hartley's requirement of non-Communist oaths by union officers. Against the law's threat to U.M.W.'s security as a union, the pension offers one weapon. As U.M.W. sees it, miners will hold on to union membership as long as an equity in a $100-a-month pension fund goes with it.

• **The Issue Joined**—That's why U.M.W. doesn't greatly fear government efforts to have its union-shop contracts declared illegal. The issue came up officially last week. Members of the staff of Robert Denham, general counsel of the National Labor Relations Board, filed a brief with NLRB. It contended that U.M.W.'s union-shop contracts break the law (BW–Jul.3'48,p62). It asked NLRB to order the union to "cease and desist" from insisting on enforcement of its union-shop clause until: (1) union officers comply with the T-H law by signing non-Communist affidavits and by filing required union financial reports; and (2) mine workers authorize a union-shop contract through an NLRB election at every mine.

• **Pensions on the Move**—Meanwhile, the pension checks were moving (picture, above). First pensioner Horace Michael Ainscough had been working in the mines since he was nine years old. He met all the conditions for eligibility to the fund. He was 62 years old (one requirement), and he had worked more than the specified 20 years—in Wyoming's coal mines.

So far, U.M.W. has received 450 applications for pensions from soft-coal miners. Their average age is 66.3 years; they have averaged more than 39 years in the mines.

The money for bituminous industry pensions comes from a tonnage royalty on the coal the miners produce. When the welfare fund was established in 1946, the royalty was 5¢ a ton; it was boosted to 10¢ last year. Now it's 20¢.

The anthracite industry, too, was paying its first pensions this week. They are for the same amount ($100), are financed in the same way, and are paid under the same eligibility requirements.

INTERNATIONAL OUTLOOK

BUSINESS WEEK
SEPTEMBER 18, 1948

The U. S. is ready to get tough over the Berlin crisis.

The plan is to take the issue to the United Nations in Paris—unless Stalin suddenly reverses his present tactics. This could end in economic sanctions against Russia (page 15).

But don't expect such a move to produce a Berlin settlement. It will widen the rift between East and West, probably turn U. N. into an anti-Soviet coalition.

Washington figures no other course is open, except backing down to Russian pressure.

•

Of course Moscow has some cards to play, too. It could:

(1) Apply economic sanctions of its own. Soviet exports to the West are small, but they're strategic. U. S. steel companies get about 40% of their chrome and 20% of their manganese from the U. S. S. R.

(2) Incorporate the satellites into a greater Soviet Union. U. S. and British intelligence services have uncovered Russian plans for such a move. The plans include: staging phony plebiscites to give the scheme a legal veneer; integrating satellite military forces with the Red Army.

•

Some of the spadework for the greater Soviet is being done now.

Stalin's MVD (secret police) has sent two divisions into Poland. Their job is to stamp out peasant nationalists who oppose Warsaw's drive to ape Soviet collectivization.

Russia's two top military leaders—Minister of War Bulganin and Marshal Koniev, ground forces chief—have spent a lot of time recently outside the U. S. S. R. Neither attended the Sept. 2 funeral of Andrei Zhdanov, who had been Molotov's chief rival as Stalin's successor.

•

ECA chief Paul Hoffman hopes to have $500-million in Marshall-Plan loans signed by the end of the month. This is half of what Congress requires for the first year of the Economic Cooperation Administration.

On Hoffman's list are: Britain, $185-million; France, $110-million; Italy, $40-million; Belgium-Luxembourg, $37-million.

But Hoffman has had to make concessions to lure European borrowers.

ECA had planned 20-year loans with interest at 3% to 3½%. (The only loan signed so far—to Iceland—runs for 10 years, at 3%.)

Now Hoffman apparently is thinking in terms of 40 years at 2½%. Interest on all the loans will be the same. So Iceland can expect its rate to be whittled down.

•

Plans for a European currency pool are being held up by U. S.-British differences. The British fear a repetition of the 1947 convertibility crisis—which cost them $1-billion in gold and dollars.

Britain is ready to join Belgium, Sweden, Switzerland, and Italy as a creditor in the pool all right (page 130). It has agreed to contribute $282-million in sterling.

But London balks at the U. S. idea of giving pool-debtors, such as France, the right to spend this sterling freely. London wants the pounds that go to France, or other needy countries, to be spent in the sterling area only.

The British argue thus: If the pounds can go anywhere, France may decide to spend them in Belgium instead of Britain. But in that case, Belgium might get more sterling than it is willing to hold. And under the terms of a

British-Belgium payments agreement, London has to pay gold whenever Brussels' sterling holdings reach a certain level.

•

Prime Minister Nehru is staking India's future on a quick victory against Hyderabad.

If India's troops move too slowly, Hyderabad's Moslem fanatics may start slaughtering the state's Hindu majority. (Hyderabad is a large princely state in south-central India. It is surrounded by Indian territory; its population is more than 80% Hindu, but its Moslem ruler, the Nizam, won't join India. Instead, he's been building up his Moslem army.)

A slow war could set off a blood bath in the whole sub-continent. Hindus in India would take revenge on the Moslem minority there. Then a Pakistan declaration of war on India would be almost sure.

Actually, it shouldn't take the Indian army long to mop up Hyderabad. This state has little industry. It depends on imported food and fuel.

•

India's ambitious industrial plans will go on the shelf until the Hyderabad affair is over.

How big are these plans? An official estimate says India needs $600-million of U. S. capital goods in the next five years.

Here's a breakdown of some of the key requirements from the U. S.: machine tools, $90-million; ships, $90-million; iron and steel plant, $45-million; automotive equipment, $60-million; aircraft, $30-million; textile machinery, $30-million; chemical plant, $30-million.

•

Third-quarter exports from the U. S. to eastern Europe and Russia remain low. Washington estimates the total at $25-million.

That's roughly the same as second-quarter exports. It compares with about $80-million for the first three months of the year.

Export licenses were actually issued for $30-million to $40-million worth of shipments. But a lot of the licenses are still outstanding. These cover railway equipment for Poland; machine tools, steel products, and coal pulverizers for Finland; construction and conveying machinery, mining equipment, and oilwell machinery for Russia.

•

The Queuille government in France has a new strategy: It's putting top priority on hiking taxes in the battle against inflation.

Here's how the new taxes will probably be piled on: 33% on profits (both industry and agriculture); 36% on cigarettes; 20% on alcohol; 7% on gasoline; 30% on railway passenger fares; 20% on rail freight.

This program won't please anybody. It will stiffen labor's clamor for a wage boost. Businessmen and farmers will squawk.

But the French Assembly starts a month's recess next week. So if Queuille can hang on until then, he'll have a few weeks in office.

•

This week Yugoslavia settled up with the U. S. to the tune of $17-million.

The money will go to U. S. companies and individuals whose properties have been nationalized by Tito. The payment is part of the deal made in July which thawed out $47-million in Yugoslav gold that had been frozen here.

Tito has also taken about $18-million in gold from his kitty and salted it away in Switzerland. Apparently he figures it will come in handy if Moscow succeeds in upsetting his regime.

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BUSINESS ABROAD

WASTE METAL for Bethlehem Steel's furnaces arrives as U. S. tackles problem of . . .

Bringing in German Scrap

To speed it up, the government plans a central buying agency. Despite some opposition it will probably materialize. Even so, other obstacles will still hamper our scrap imports.

The U. S. is resorting to a centralized buying agency to get iron and steel scrap moving out of the rubble that is Germany. It's a stitch-in-time plan, designed to ease the U. S. scrap shortage before it upsets domestic steel operations.

Last week almost 300 of the nation's scrap dealers met in Washington to talk over the idea of a government-sponsored, private corporation to buy German scrap. The majority of the dealers gave their O. K., despite howls of "monopoly" from a minority.

• **Hurdles**—The Justice Dept. still has to pass on the proposal before it can be put to work. And nobody has yet resolved the long, drawn-out U. S.-British squabble over prices and distribution of the German scrap. But government officials expect the new agency to be operating in a matter of weeks.

The corporation's first job will be to see that 440,000 tons of scrap earmarked for the U. S. by the joint occupation authorities is shipped from Germany this year. Contracts for about half this amount have already been signed by individual dealers (BW—Sep. 4'48,p103).

• **More to Come**—So far only 50,000 tons of German scrap have reached this country. But before the month is out another 25,000 tons may have arrived here. Among those who are handling these operations are Richard Nathan Co.; World Commerce Corp.; and Adolf Eagan of Great Lakes Carbon Corp., acting for Bethlehem.

The proposed corporation may get an additional 1-million tons moving overseas by the end of 1949. There's plenty of German scrap to be had. Latest estimates put the tonnage of scrap lying around the country at about 15-million long tons. This is half again as much as a U. S. industry-government mission estimated last March.

• **First of Its Kind**—The new corporation will be unique. For the first time an industry is seeking protection under the Taft Voluntary Allocation Law (Public Law 395). Passed by Congress in December, 1947, this law provides—among other things—that the government may help industry make voluntary agreements to divide up scarce commodities (BW—Jan.3'48,p19).

In this particular case, the iron and steel scrap industry would organize a private corporation. The dealers would act as stockholders or debenture holders, depending on the kind of financing decided on.

This corporation would then have exclusive rights to buy up the U. S. share of scrap allocated from Germany—at prices to be fixed by U. S.-British occupation chiefs. Once this scrap is bought, it will be allocated by the Commerce Dept. among U. S. consumers (mills and foundries) on the basis of greatest need. Allocations would be made in roughly the same way as the War Production Board parceled out scarce materials during the war.

• **What Lies Ahead**—Before the new corporation can swing into action two problems will have to be licked here at home:

(1) Details of financing and operation will have to be worked out. Commerce Secretary Sawyer is now mulling over the names of 50 prominent leaders of the scrap industry from which an advisory committee will be formed. This committee will decide on the financial and operating setup.

(2) Attorney-General Tom Clark must give it a green light, after public hearings. In effect, Clark must determine whether the plan meets P. L. 395 requirements for waiving anti-trust laws. The Justice Dept. is keeping abreast of developments; it is expected to give its decision within a matter of weeks.

• **Dissenters**—A minority of the scrap dealers are going all out to see that the corporation is still-born. This group will undoubtedly use the Justice Dept.'s public hearings to plead their case. A leading dissenter is the Western Steel Corp. of New York which a few weeks ago announced it had bought 250,000 tons of scrap from the German National Railways to be sold to Bethlehem Steel (BW—Aug.21'48,p107).

Even with all these obstacles behind it the new corporation won't be much farther than first base. Right now the Joint Export-Import Agency, top trade body for the U. S. and British military government, has a tight embargo on all exports of scrap from Germany. More than 50 contracts have bogged down in JEIA's Frankfurt office over the past 70 days. Reason: U. S. occupation chief Gen. Lucius D. Clay can't see eye-to-eye on prices with his British counterpart, Gen. Sir Brian Robertson.

• **No Credit**—The history of the Anglo-American dispute over the price to be paid for German scrap is no credit to either party.

Last fall American buyers were outbidding the British. General Clay prodded the latter to start paying the world price. Now the shoe is on the other foot. The British have upped their price from $26 a gross ton at a German port to $30. Their reason is to outbid speculators and inexperienced buyers who, they claim, are making a hash out of the business.

Clay doesn't agree. He reasons that since the quantities allocated to the

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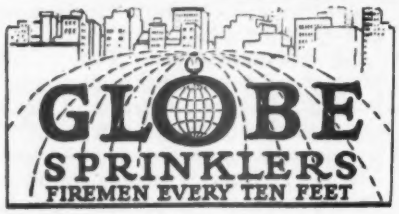

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U. S. as well as the rest of the Marshall-Plan nations are fixed, higher prices won't increase the total available for shipment. So he has refused to grant additional export licenses. (The U. S. has a majority voice in JEIA decisions, so Clay's refusal in effect creates an embargo.)

• **Other Difficulties**—Besides prices, the U. S. and Britain had a falling out over the distribution of German scrap. On the basis of earlier estimates, this year's loot was divided thus: 540,000 tons for Britain; 440,000 tons for the U. S.; 220,000 tons for the rest of the Marshall-Plan nations. The British don't like the U. S. getting so much. They say that Europe's scrap deficit is somewhere between 1-million and 1.5-million tons a year. Before the war, they point out, Europe's deficit was met from U. S. sources. Now with the U. S. out to get a share of German scrap the supply situation is tighter than ever.

And finally there is a little matter of 50,000 tons of German scrap earmarked for Czechoslovakia. The deal was concluded back in October, 1946, when Russia and the West were still on fairly good terms. Only 7,000 tons have been shipped east so far, largely due to difficulties involved in collecting and transporting the scrap. But JEIA intends to push the deal through to completion.

• **British Method**—The new corporation may be able to operate more effectively than private buyers in such a situation. And it may be a useful counterpart to the quasi-governmental organization that handles Britain's German scrap operations.

This unit, with a staff of 60, does the buying for all British mills. It also allocates the scrap to British mills, selling it at a subsidized price of $18 a ton.

Britain has done a much better job of getting German scrap to its mills than the U. S. has so far. All told the British have taken some 900,000 tons of scrap out of Germany. About 600,000 tons have been "war booty scrap" that the British take much like a reparation. (The U. S. has announced it won't take any more booty scrap from its zone; expect the British to follow suit. London is thinking it over.) The rest was bought through regular channels.

• **U. S. Is Behind**—The U. S. hasn't done nearly as well. There are, of course, the 50,000 tons of German scrap

Cotton Rolls Over the Mexican Border

The first day Mexico's cotton-export ban was lifted, 350 heavily loaded trucks rolled over the International Bridge at Brownsville, Tex. Some of the cotton will be re-exported from the U. S. Some will be stored in bonded warehouses until the U. S. government fixes the cotton import quota for this year.

Behind the heavy northbound traffic is the recent devaluation of the Mexican peso. When the peso tumbled, it made Mexican cotton cheaper for U. S. buyers. So cotton ginners south of the border looked for record sales in the U. S., but the Mexican government slapped on an embargo. It wanted to be sure local textile mills got their share of the crop. (Before it lifted the embargo, it took another precaution: It levied a tax of $17 (U. S.) a bale on exported cotton. The tax is designed to keep enough Mexican cotton in Mexico to serve local needs.)

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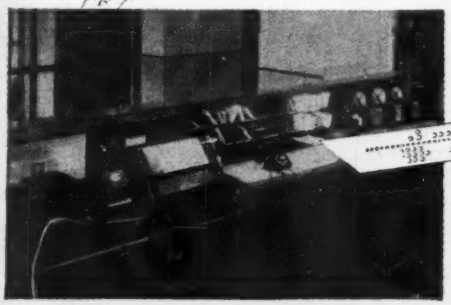

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HAVE YOU SEEN.....
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already shipped here, and the 25,000 tons due to land here this month. But besides this there are only the 27,000 tons which an outfit called Canterbury Corp. has shipped; some of it is still in transit. Most of this is U. S. Army-generated "booty" scrap (BW--Jul.24'48, p22).

Recently the burden of smoothing out the wrinkles in the scrap muddle was shifted from Germany to Washington and London. As a result the current embargo may be lifted soon. If it is and the new U S. corporation gets cleared for action at home, U. S. mills and foundries will be getting more and more German scrap from here on.

• **Japanese Scrap**—But German scrap won't fill all the gap by any means. U. S. buyers will have to look for other ponds to fish in. One will be Japan; another, here at home.

About 300,000 tons of Japanese scrap have been made available to U. S. buyers. About half of this is owned by agencies of the Japanese government. It will be sold by the Japanese Board of Trade on a sealed bid basis. The rest is in private hands; it will be sold through private channels. Watching over both operations will be SCAP (Supreme Commander Allied Powers).

• **Treasure Hunt?**—Here at home Commerce Secretary Sawyer has urged the scrap industry to start a national treasure hunt to collect all domestic scrap possible. A recent drive put on by Eastman Kodak Co. in its Rochester, N. Y. plant produced 3,500 tons in 30 days.

Every little bit counts if the U. S. iron and steel industry is to maintain its high production rate. Last year it used 26-million tons of purchased scrap —2-million more than ever before.

Canada, U. S. Team Up on Titanium

OTTAWA—A big titanium development in the province of Quebec promises real economic importance to Canada—and help to U. S. industry. It is being pushed by two U. S. companies, Kennecott Copper Corp. and New Jersey Zinc Co.

Kennecott Copper and New Jersey Zinc are joint owners of Quebec Iron & Titanium Corp.. This newly formed concern will develop and exploit a 125-million ton deposit of ilmenite (titanium-iron ore) in the Lake Allard area on the north shore of the St. Lawrence River (map, right). The ore will be taken out by rail to Havre St.-Pierre, shipped 400 miles upstream to Sorel.

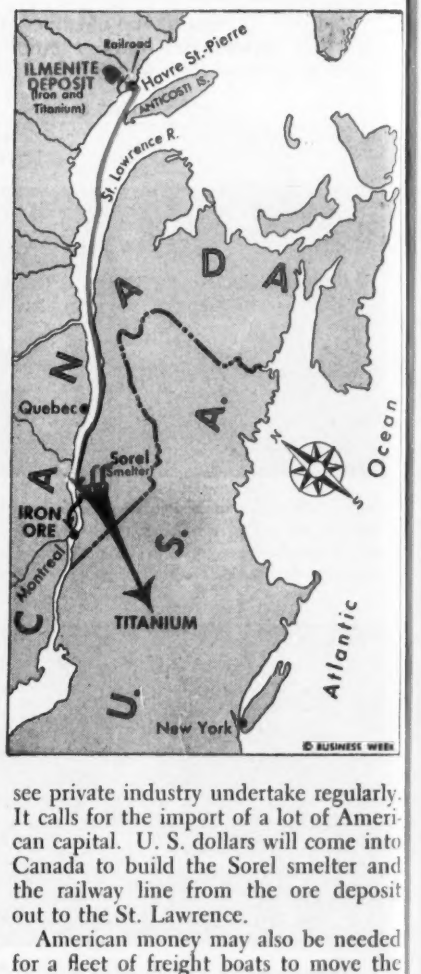
• **New Construction**—First construction projects will be a $10-million railway from the ore body to Havre St.-Pierre, and a $15-million smelter at Sorel.

The Sorel plant will handle 1,500 tons of ore a day when it goes into operation in 1951. It will heat its electric furnaces with power supplied by Shawinigan Water & Power Co.

• **Output**—Output, after smelting, is expected to be 800 tons of titanium oxide and about 600 tons of high-grade iron ore daily. The titanium oxide will be shipped to the U. S. Here it will be used in the making of paint, paper, dyes, etc. It may also be turned into a light metal that has many of the qualities of stainless steel. The iron ore will go to the Montreal area.

It has been known for years that there was ilmenite near Lake Allard. But development wasn't feasible until the two American companies recently got the right method of separating the titanium from the ore. (The ore yields 35% titanium oxide, 40% iron.)

• **U. S. Capital**—The project is the kind the Canadian government would like to see private industry undertake regularly. It calls for the import of a lot of American capital. U. S. dollars will come into Canada to build the Sorel smelter and the railway line from the ore deposit out to the St. Lawrence.



American money may also be needed for a fleet of freight boats to move the ore upstream. Moreover, the export of titanium will be a permanent dollar-earner, and the company's output of iron will reduce Canadian imports of iron and steel.

PRESIDENT D. Carlysle MacLea of new Dahican American Lumber Corp.

To Get More Mahogany From Philippines

A new U. S. concern—Dahican American Lumber Corp.—has one major objective: to get more Philippine mahogany to the American market.

• **By 1949**—D. Carlysle MacLea, president of MacLea Lumber Co. of Baltimore, heads the new corporation. He expects that his operating company in the Philippines, Dahican Lumber Co., will be shipping mahogany to the U. S. early in 1949.

The lumber will come from the 110-sq. mi. Dahican tract on Luzon. The tract was operated before Pearl Harbor by Atlantic, Gulf & Pacific Co.—which holds a financial interest in the new concern. When the Japanese overran the Philippines, they operated the tract until a fire destroyed the mill in 1944. Then the site became badly overgrown.

Rehabilitation work got under way this summer. A new mill is being installed. Two kilns are being renovated. The old railway rolling stock can still be used, but tractors and trucks will play a bigger part than they did prewar. The dock at Dahican will be ready to handle freighters.

• **22-Million Bd. Ft.**—Dahican Lumber Co. expects to have a capacity of 22-million to 28-million board feet of lumber a year. It will sell half its output in the Philippines, ship the other half to the U. S.

A. M. Amend, of Manila, is president of Dahican Lumber Co. He was the manager for Atlantic, Gulf & Pacific from 1930 to 1939. Amend plans to "farm" the tract according to sound forestry practices (BW—Jul.10'48,p22). The trees will be marked by the Philippine Bureau of Forestry.

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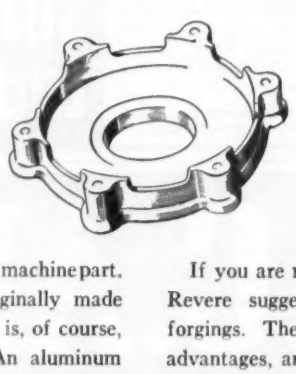
BUSINESS IN MOTION

To our Colleagues in American Business . . .

Here is another example of the fact that the cost of material per pound is not so significant as the cost of the finished part or product made out of it. In fact, judging material costs on a cents-per-pound basis may be completely misleading.

Revere during the war was asked by the government to apply its long experience with copper and brass to the manufacture of mill products in aluminum. It has remained in the aluminum business, making tubing, extruded shapes, and forgings. The latter naturally are custom-made to special designs. One of these seemed interesting to us, and the customer was asked if he would care to provide facts and figures that would show why he found it economical to choose an aluminum forging for this machine part.



He told us that he originally made this out of cast iron, which is, of course, an inexpensive material. An aluminum forging naturally costs more than an iron casting, in this case 5.2% extra. That would seem to be a big handicap to overcome, but a number of important savings when totaled together showed that this "costly" forging was actually saving considerable sums.

For example, the iron casting was 1/8 inch oversize on top and bottom, to allow for machining; the aluminum forging is so accurate to dimensions that only 1/32 inch is allowed for machining. This means 75% less stock is removed when machining the two faces.

Machining cost is 75% less than on the iron casting, this figure including a loss of 10% of the castings due to defects uncovered by machining. Since the forging is dense and uniform, free from porosities, it is unnecessary to pressure-test it to make certain of its quality. This pressure test of the casting was an expensive process in terms of labor costs and time consumed. Doing away with it not only reduced costs but speeded up production. When all the figures were in, it was found that this forging which was 5.2% more expensive actually cost 35.4% less as a finished part. And it was a better part, too, in every way.

If you are making or buying castings, Revere suggests that you investigate forgings. They have many structural advantages, and, as this example shows, may also offer economies. In fact, no matter what you make or buy, Revere recommends that you disregard the initial cost of materials. It may very well be that a more expensive material is less costly in the end and will not only save money but improve your product's appeal to your market. One final thought — suppliers to every industry will be delighted to collaborate with you in your studies of this subject. Why not call them in and add their knowledge to your own?

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ECA'S LEDGER

Reports From Washington

Is the dismantling of German factories for reparations hindering European recovery? Last week George M. Humphrey, president, M. A. Hanna Co., Cleveland, was named to head a committee to advise ECA boss Paul Hoffman on this vital point.

Under the ECA law, Hoffman may suggest to the State Dept. that plants be left intact if that helps recovery most. Then the department is supposed to smooth the ruffled feathers of nations who wanted the plants.

Reports that the U. S. is reviewing its reparations policy have already drawn fire from the other side of the Atlantic. Last week British Foreign Secretary Ernest Bevin objected via a letter to Secretary Marshall. The French are even more upset. Any policy tending to build up Germany is political poison to France.

The new ECA committee's other members—all corporation presidents—are: John L. McCaffrey, International Harvester; Gwilym A. Price, Westinghouse Electric; Frederick V. Geier, Cincinnati Milling Machine; and Charles E. Wilson, General Motors.

Other developments:

• **Policy**—ECA funds will no longer be used to cover insurance premiums on ECA cargoes. From now on, either the importer or the exporter will have to foot the bill on insurance—as in normal trade.

• **Productivity Council**—Philip D. Reed, chairman, General Electric Co., will head the U. S. side of the joint Anglo-U. S. council to study productivity in Britain. The council will meet during the week of Oct. 25.

Other members of the U. S. team: Ernest R. Breech, executive vice-president, Ford Motor Co.; Ira Mosher, president of Ira Mosher Associates and former head of the National Assn. of Manufacturers; J. Spencer Love, chairman, Burlington Mills Corp.; L. S. Buckmaster, president, United Rubber, Cork, Linoleum & Plastic Workers of America (C.I.O.); Harvey Brown, president, International Assn. of Machinists (Ind.); and Lee Minton, president, Glass Bottle Blowers Assn. of U. S. One more labor representative still has to be appointed by Hoffman.

• **New Faces**—Henry B. Arthur, economist for Swift & Co., will replace Calvin B. Hoover as chief of ECA-Paris' vital office of program review and recovery progress (BW—Sep.4'48,p105).

• **Loans**—Sweden's first ECA aid will be a $10-million loan to buy goods and services—mainly in Canada, the U. S., and Latin America. Details of the loan

negotiation are still being worked out.

Italy is also seeking a loan of about $40-million. Negotiations for loans totaling $516-million are due to be completed by the end of this month.

• **Procurement Authorizations**—For the week ended Sept. 8, ECA authorized $66,606,927 to cover purchases. This brought total authorizations to almost 75% of the first six month goal of $2-billion.

Of last week's total, less than a third was for food, feed, and fertilizer. Most was for machinery and industrial raw materials. For the first time offshore purchases were made in Spain (iron pyrites for Bizonia) and Japan (cotton fabrics for the Netherlands East Indies).

Reports From Abroad

The Organization for European Economic Cooperation fulfilled its promise to divvy up the $4,875,000,000 Marshall-Plan pie for the first year of operation (April, 1948, to March, 1949).

The big problem—Bizonia's share—ended in a compromise. OEEC specified $414-million for Bizonia. That's about $50-million more than the figure originally set by an OEEC sub-committee—and somewhat less than Gen. Lucius Clay was hoping for.

Biggest share goes to Britain—$1,260,000,000. France gets $989-million; Italy, $601-million; Netherlands (including the Netherlands East Indies), $496-million; Belgium-Luxembourg, $250-million.

At the same time OEEC announced the amounts that creditor nations will be called on to advance in their own currency to debtor nations under the intra-European trade plan (BW—Aug. 28'48,p86).

Britain will put up $282-million worth of sterling; Belgium, $207-million in Belgian francs. The other creditor nations called on to kick in smaller amounts are Italy, Sweden, Turkey, and Bizonia.

France will get the major share of these intra-European grants—$323-million. Others receiving this form of aid are Austria, Netherlands, Greece, Denmark, French-zone Germany, and Norway.

This idea of supplementing U. S. aid with intra-European credits came as an afterthought to Marshall Planners. It received quick approval from Hoffman last June when intra-European trade tangles threatened to upset the whole apple cart. Then it went to OEEC in the form of a report in August. There are a lot of wrinkles left in it. These are being ironed out now by OEEC and ECA-Paris chief Averell Harriman. But if the plan works, this year's ECA aid of $4,875,000,000 will bring about a transfer of goods worth about $5.6-billion.

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THE TREND

On Training Business Leaders

Future leaders of business are being trained now in the nation's colleges and universities. The training they get and the efforts now being made to improve it are subjects that deserve the close attention of the business leaders of today, for the old saying, "as the twig is bent, so will the tree incline," applies with particular force to that branch of education concerning economics and business.

Recently we have run across two things bearing on education for business leadership that are worthy of more attention than they have received. One is a survey of business opinion about college economics and business administration courses. The other is the appearance of several new textbooks that attempt to deal with economics in a practical way.

I. College Courses

The American Economic Assn. wanted to find out how much time businessmen thought college students preparing for business careers should spend on courses in economics and business administration. So the association asked Dun & Bradstreet to conduct a survey. Questionnaires were mailed to 4,000 business executives; 472 replies were received. Here are the main conclusions:

(1) Half the businessmen replying think 40% or more of all college time should be spent on economics and business courses;

(2) Somewhat greater emphasis should be placed on business than on economics courses.

Apparently there is a fairly wide gap between what businessmen think and what most colleges and universities require. Many of them grant a degree with a major in economics to a student who has devoted as little as 20% of his time to his major subject.

In reporting this gap, we're not trying to start a campaign for revising college curricula across the nation. But we would like to start a movement to get businessmen and educators in better communication with each other. It is our firm belief that the eventual results would be highly productive for both sides. A new and better curriculum for economics and business administration courses would undoubtedly be one of the byproducts of this process.

The survey also brings out the fact that a substantial minority of businessmen views the whole subject of college teaching of economics with a jaundiced eye. Here are some of the comments that were volunteered:

> "Too often we find the youth of today crammed full of theory which he is unable to digest."
>
> "My experience tells me professors of economics are the worst economists themselves."
>
> "The kind of economics taught in most of our colleges and universities does a lot more damage than good."

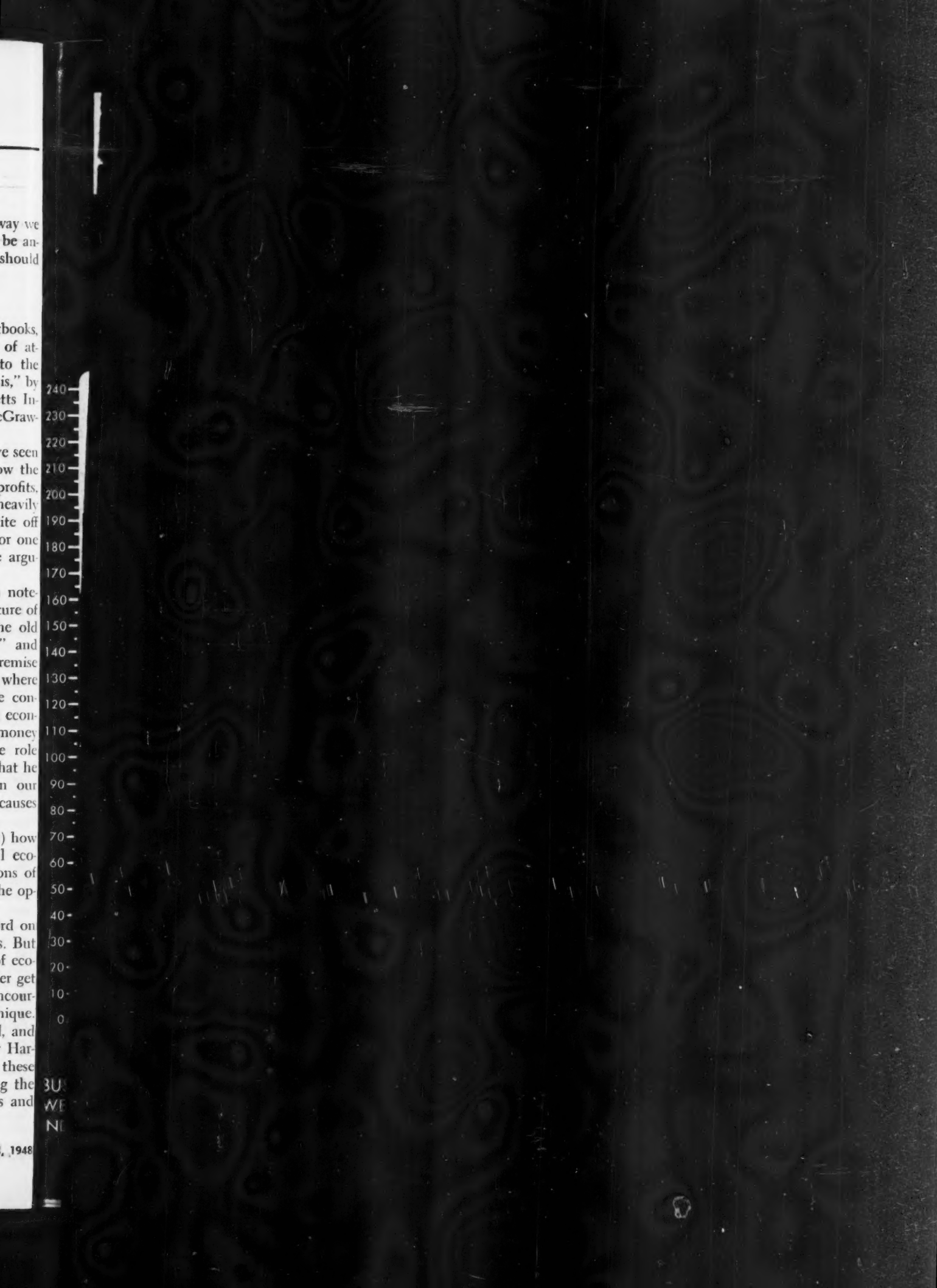
Just how large is the minority that thinks this way we don't know. But we suspect it is large enough to be another good reason why businessmen and professors should know each other better.

II. College Textbooks

Turning now to the subject of economics textbooks, let's look at one of the most recent in a series of attempts to work out a more practical approach to the subject. It is "Economics—An Introductory Analysis," by Dr. Paul A. Samuelson, a professor at Massachusetts Institute of Technology. It was published by the McGraw-Hill Book Co.

Dr. Samuelson gives the best explanation we have seen yet of how national income is determined and how the shares of national income (wages, salaries, interest, profits, and rents) are distributed. In so doing, he leans heavily on the work of John Maynard Keynes. Don't write off Samuelson as a crackpot "Keynesian," however. For one thing, he does a fine job of presenting fairly the arguments of both Keynesians and anti-Keynesians.

But the real reason why the Samuelson book is noteworthy is that it gives students a more realistic picture of how the economic machine operates than did the old style textbooks, with their discussions of "pure" and "perfect" competition. He starts out from the premise that we live in a mixed private enterprise system where both government and private institutions exercise control. And then he proceeds to show how our mixed economy operates by describing the function of money and capital, the distribution of income, and the role played by business, government, and labor. After that he goes into the problem of the business cycle. In our opinion, he does a superb job of laying out the causes of ups-and-downs in business activity.

In a word, the book aims to teach the student (1) how to think intelligently about the issues of national economic policy that lie ahead, and (2) how operations of an individual business affect, and are affected by, the operations of the economic system.

We doubt that Samuelson has said the last word on these matters, and we don't agree with all he says. But we think his book comes much closer to the sort of economics that will help the prospective business leader get ahead than any of the old style texts. And we are encouraged by the fact that the Samuelson book is not unique. "Modern Economics," by A. E. Burns, A. C. Neil, and D. S. Watson, is another recent text, published by Harcourt, Brace & Co., with similar aims. We hope these books mark the beginning of a trend toward giving the college student a down-to-earth view of economics and business.